

FLEET OPERATOR'S REFERENCE ANNUAL

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

APRIL 1941

Transportation
Library

APR 7 1941

TRANSPORTATION *tailored to fit your job*

Again Reo blazes a new trail! Following introduction of the sensational Reo "MORE-LOAD" Truck, with its many revolutionary improvements, Reo now brings to you **TAILORED TRANSPORTATION AT REGULAR PRODUCTION PRICES.**

Thus . . . in addition to giving you all the basic advantages of Reo advanced design and quality . . . you get a custom-tailored truck with the power, speed, hill climbing ability, load capacity, roadability, maneuverability and other specific require-

ments which fit your particular operation down to the last detail. The result is: a standard of transportation efficiency and operating economy which no other truck in the world can match.

In the final analysis, the measuring-stick of a truck's over-all value is cost per ton mile. And Reo is proving its definite superiority by putting ton-mile costs on a lower basis than they have been before! Investigate and cash-in. **REO MOTORS, INC.,** Lansing, Mich.



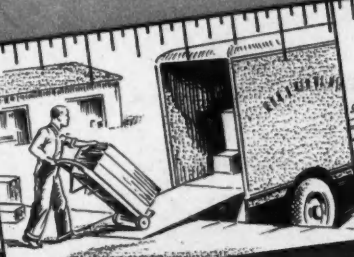
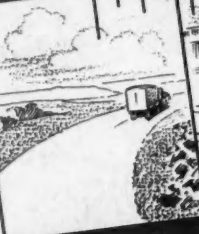
TYPE OF WORK



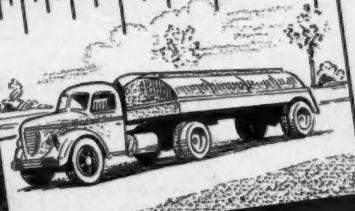
GRADES TO CLIMB



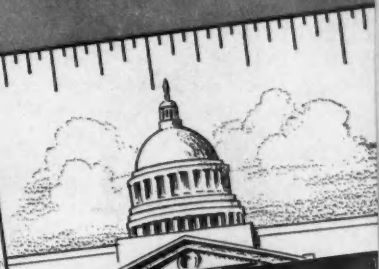
KIND OF ROADS



TYPE OF CARGO



LONG OR SHORT HAULS



STATE REGULATIONS



Q. Why are more
and more truck
users standardizing on
Dodge Job-Rated Trucks?



A.

Paul J. Howard has the answer...

"As the result of the economy and performance of a 1936 Dodge 1 1/2-ton truck, we are now standardizing on Dodge equipment for our entire fleet."

WHEN the truck fits the job . . . with the right size engine for power . . . the right size frame, clutch, transmission, rear axle and brakes . . . all quality-built for long life . . . that's a truck for you!

This is why many companies, including California Flowerland, Los Angeles, are standardizing on Dodge Job-Rated trucks.

Dodge trucks can do a great job for you, too—with high gas mileage, low oil consumption and low maintenance expense.

See your Dodge dealer for a good deal on the low-priced, high-quality Dodge Job-Rated truck that fits your job.

PRICED WITH THE LOWEST
Chassis .. \$500^{AND UP} Pick-Ups \$630^{AND UP}
(WITH COWL) Panels .. \$730^{AND UP}
Chassis .. \$595^{AND UP} Stakes .. \$740^{AND UP}
(WITH CAB)

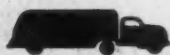
Above prices are delivered at Detroit, Federal taxes included. Transportation, state and local taxes (if any) extra. All prices shown are for 1/2-ton except stake model which is for 3/4-ton. 112 standard chassis and body models available.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

BETTER BECAUSE OF CHRYSLER CORPORATION ENGINEERING

BUY YOUR NEXT TRUCK THE **1-2-3** WAY

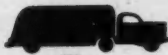
1. LOOK AT
LOW-PRICED
TRUCK 'A'



2. LOOK AT
LOW-PRICED
TRUCK 'B'



3. THEN LOOK AT
LOW-PRICED
DODGE Job-Rated
TRUCKS



DODGE DIVISION, CHRYSLER CORPORATION, DETROIT, MICH.

DEPEND ON DODGE
Job-Rated* **TRUCKS

*Job-Rated MEANS: A TRUCK THAT FITS YOUR JOB

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance
Reg. U. S. Pat. Off.
Acceptance under the Act of June 5, 1934, authorized December 18, 1934.
Published monthly.
Member C.C.A.

Vol. LXI Philadelphia, April, 1941 No. 2

EDITORIAL DEPARTMENT

JULIAN CHASE, Directing Editor
GEORGE T. HOOK, Editor
C. B. RAWSON HENRY JENNINGS H. KOHLBRENNER
Managing Editor Technical Editor Art Editor
EDWARD L. WARNER, JR. JOSEPH GESCHELIN
Detroit News Editor Detroit Technical Editor
MARCUS AINSWORTH, Statistician
L. W. MOFFETT & J. G. ELLIS, Washington News Editors

EDITORIAL CONTENTS

Copyright 1941, by Chilton Company (Inc.)

Detailed Index to Reference Data in This Issue	17
Commercial Car Journal Truck Specifications	57
CCJ Newscast	72
Showcase of New Products	76
CCJ Quiz	98
Free Books, Catalogs, etc.	106
Legislative Lookout	156
Free Money Savers to You	205
Advertisers' Index	236 and 238

Automotive Division

JOS. S. HILDRETH, President and Manager
JULIAN CHASE, Vice-Pres. G. C. BUZBY, Vice-Pres.

OFFICES

Philadelphia—Chestnut & 56th Sts., Phone Sherwood 1424. New York—
100 E. 42nd Street, Phone Murray Hill 5-8600. Chicago—Room 916,
London Guarantee & Accident Bldg., Phone Franklin 4243. Detroit—
1015 Stephenson Bldg., Phone Madison 2090. Cleveland—609 Guardian
Bldg., Phone Cherry 4188. San Francisco—444 Market St., Room 305,
Phone GARfield 1721. Los Angeles—6000 Miramonte Blvd., Phone Lafayette
5525. Long Beach, Cal.—1595 Pacific Ave., Phone Long Beach 618-238.
Washington, D. C.—Room 1061 National Press Bldg., Phone District 6877.

SUBSCRIPTION RATES: United States and United States Possessions and all Latin-American countries—\$2.00 per year. Canada and Foreign—\$4.00 per year. Single copies—25 cents.

Owned and Published by
CHILTON COMPANY
(Incorporated)



Executive Offices

Chestnut and 56th Streets, Philadelphia, Pa., U. S. A.

Officers and Directors
C. A. MUSSELMAN, President

Vice-Presidents

JOS. S. HILDRETH
EVERET B. TERHUNE

GEORGE H. GRIFFITHS
J. H. VAN DEVENTER

C. S. BAUR

WILLIAM A. BARBER, Treasurer JOHN BLAIR MOFFETT, Secretary
JULIAN CHASE THOMAS L. KANE G. C. BUZBY
P. M. FAHRENDORF HARRY V. DUFFY CHARLES J. HEALE

COMMERCIAL CAR JOURNAL
APRIL, 1941

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL, Vol. LXI, No. 2, Published monthly by Chilton Co., N. W. Cor. Chestnut & 56th Sts., Philadelphia, Pa. Subscription price: United States and Possessions, Mexico and Latin American Countries, \$2.00 per year; Canada and Foreign, \$4.00 per year. Single copies, 25¢, except April Issue, \$1.00. Acceptance under the Act of June 5, 1934, authorized December 18, 1934.

NOW *Prepare for* THIS



STOP → GO → STOP

Another Chunk Knocked Off House-to-House Delivery Costs

● The gasoline engine took over this job from the horse on its economy considering all the factors of speed and costs. Now an even greater economy is added by a new Dole Thermostatic unit.

The Dole Dual By-Pass Thermostat brings new operating economy... prevents many of the conditions that cause excessive maintenance and repairs on such runs.

Easily installed in the cooling system of commercial vehicles. Quickly raises motor temperature in the jacket at the bottom as well as the top—and maintains it at an efficient point under most difficult stop and start conditions. Elimination of sludging and crankcase dilution consequently reduces motor wear, saves gas and oil, and assures time—and money-saving performance.

Fleet owners can multiply these savings. Now is the time to line up every car on short runs for a real protective economy. Get details from your supply house.

DOLE

Dual By-Pass Thermostat

THE DOLE VALVE COMPANY

1901-1941 Carroll Ave., Chicago, Ill.

Detroit Office: General Motors Bldg.

HAULERS NOW HAVE

★ MORE DIESEL HORSEPOWER ON STREAMLINED TRAINS IN THE U. S. IS LUBRICATED WITH TEXACO THAN WITH ALL OTHER BRANDS COMBINED.

★ MORE RAILROAD ROLLING EQUIPMENT IN THE U. S. IS LUBRICATED WITH TEXACO THAN WITH ANY OTHER BRAND.

★ MORE TOURISTS USE TEXACO FIRE-CHIEF GASOLINE THAN ANY OTHER BRAND.

★ MORE SCHEDULED AIRLINE MILEAGE WITHIN THE U. S. AND TO OTHER COUNTRIES IS FLOWN WITH TEXACO THAN WITH ANY OTHER BRAND.

★ MORE BUSES, MORE BUS LINES AND MORE BUS-MILES ARE LUBRICATED WITH TEXACO THAN WITH ANY OTHER BRAND.

★ MORE STATIONARY DIESEL HORSEPOWER IN THE U. S. IS LUBRICATED WITH TEXACO THAN WITH ANY OTHER BRAND.

EVERYWHERE, Diesel and heavy-duty gasoline truck engines are now keeping at peak . . . *clean, full-powered* . . . for thousands of extra miles of service.

Piston rings stay free in their grooves; filters, screens and oil lines stay open; engines keep free from sludge.

The only change made to bring about these improvements was the use of *Texaco 303 Motor Oil*.

Texaco 303 Motor Oil assures freedom from sludge and carbon deposits over longer periods of time. With its protection, oil corrosion of bearings is prevented.

The outstanding performance that has made Texaco preferred in the heavy-duty truck field has also made it preferred in the fields listed to the left.

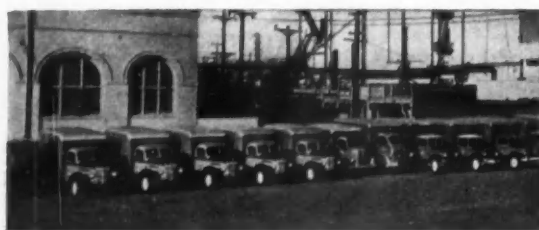
Buyers in these fields are enjoying many benefits. You, too, will find important advantages when you use Texaco Lubricants and Fuels.

Let a Texaco Lubrication Engineer cooperate in reducing maintenance costs in your equipment. Phone the nearest of more than 2300 Texaco distributing plants in the 48 States, or write:

The Texas Company, 135 East 42nd St., New York, N. Y.



Texaco Dealers invite you to enjoy FRED ALLEN in a full-hour program every Wednesday night. CBS, 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.



PART OF 70 VEHICLE FLEET operating out of Wilson & Co.'s Los Angeles Branch. Stepped up engine efficiency and increased mileage between lubrications credited to the use of Texaco.

TEXACO'S FOUR FEATURES FOR FLEETS



TEXACO THUBAN for transmissions and differentials. Less wear on gears and easy shifting the year 'round.



TEXACO 303 MOTOR OIL — keeps filters, screens, oil lines open, rings and valves free for longer periods of time.



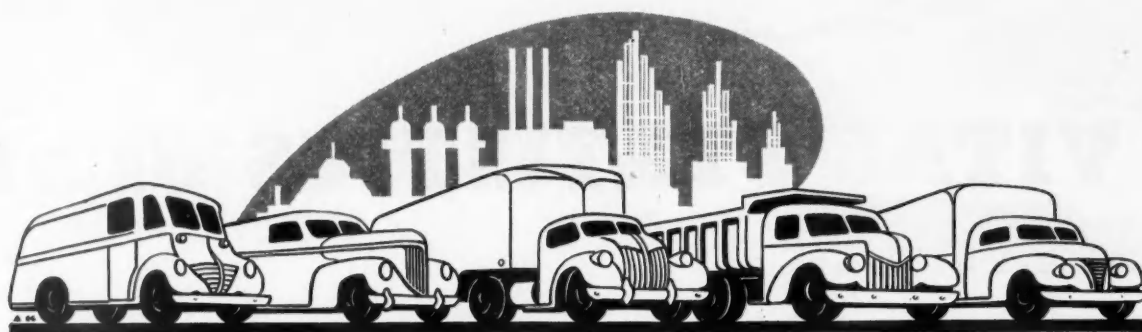
TEXACO FIRE-CHIEF GASOLINE assures fast starts in any weather, rapid acceleration, full power, greater economy.



TEXACO MARFAK—HEAVY DUTY—the new all-season wheel bearing lubricant that seals itself in. Makes bearings last longer.



TEXACO



VOL. LXI, NO. 2

COMMERCIAL CAR JOURNAL

APRIL, 1941

1941

FLEET OPERATORS'

REFERENCE ANNUAL

INDEX TO REFERENCE DATA

GENERAL

Vital Statistics of the Truck Industry.....	18
1940 New Truck Registrations by Makes.....	64
Trailer Registrations	54

MAINTENANCE

Battery Data by Truck Models.....	52
Battery Fast Charger Specifications.....	52
Charging Controls Test Specifications.....	138
Clutch Specifications	32
Cooling System Capacities.....	66
Diesel Engine Specifications.....	51
Distributor Test Specifications.....	146
Engine Service Specifications.....	34
Front End Alignment Specifications.....	42
Gasoline Engine Specifications.....	46
Generator Test Specifications.....	140
Lubricant Capacities of Engine, Transmission & Rear Axle by Truck Models.....	66
Lubrication Specifications	44
Painting Specifications	55
Starter Test Specifications.....	150
Tension Specifications	48
Transmission Specifications	53
Trouble Shooting Guide.....	104

OPERATION

Ability Chart for Trucks.....	22
Accident Data	54
Diesel Fuel Specifications.....	50
Diesel Fuel Taxes by States.....	51
Fleets by Sizes & States.....	56
Gasoline Taxes by States.....	51
Hours of Service for Drivers by States.....	32
I.C.C. Safety Equipment Requirements.....	30
Refrigeration Data	84
Safety Equipment Regulations by States.....	27
Size & Weight Limits by States.....	24
Speed Chart for Trucks.....	21
Tire Capacities, Sizes & Pressures.....	33
Transportation Engineering Formulas.....	33

SELECTION

Semi-Trailer Specifications	65
Third Axle Specifications	49
Transmission Ratios	53
Truck Specifications Table.....	57

CROSS INDEX

Where to Find It.....	78
-----------------------	----

EDITOR'S NOTE

Coming at a time when trucks are being called upon to bear their full share of the National Defense effort, this Fifth Edition of the Fleet Operators' Reference Annual should prove more useful than ever before in helping fleetmen to keep their trucks operating steadily and

efficiently. This volume is, in reality, a truck industry effort. Leading manufacturers have cooperated in the presentation of technical data because they recognize that their products can give the utmost satisfaction only when they are adequately maintained.

VITAL STATISTICS OF THE

AGE OF TRUCKS IN USE*

Year	New Truck Registrations	Per Cent Surviving	Number Surviving	Average Age	Of Trucks in Use
1940	576,327	100.0	576,327	1 1/2	576,327 are up to 1 year of age
1939	486,748	99.6	494,801	1 1/2	1,061,128 " " 2 years of age
1938	365,349	98.7	360,599	2 1/2	1,421,727 " " 3 " " "
1937	618,249	97.6	603,411	3 1/2	2,025,138 " " 4 " " "
1936	611,644	96.0	587,178	4 1/2	2,612,316 " " 5 " " "
1935	510,683	93.3	476,467	5 1/2	3,088,783 " " 6 " " "
1934	403,886	89.0	359,456	6 1/2	3,448,241 " " 7 " " "
1933	245,869	82.0	201,612	7 1/2	3,649,853 " " 8 " " "
1932	180,413	71.9	129,717	8 1/2	3,779,570 " " 9 " " "
1931	313,884	58.8	184,540	9 1/2	3,964,110 " " 10 " " "
1930	410,699	44.0	180,707	10 1/2	4,144,817 " " 11 " " "
1929	527,057	29.2	153,900	11 1/2	4,298,717 " " 12 " " "
1928	341,123	17.9	61,061	12 1/2	4,359,778 " " 13 " " "
1927	327,965	11.1	36,404	13 1/2	4,396,182 " " 14 " " "
1926	385,997	6.9	26,634	14 1/2	4,422,816 " " 15 " " "
1925	418,000†	4.4	18,392	15 1/2	4,441,208 " " 16 " " "
1924	340,000†	2.0	9,520	16 1/2	4,450,728 " " 17 " " "

† Partly Estimated.

* These figures are purely a statistical approximation calculated from a life curve applicable to passenger cars. Frankly, COMMERCIAL CAR JOURNAL has no authentic data as to the life expectancy of trucks. However, if trucks last longer than passenger cars then the conclusions are conservative. If they do not last as long then the conclusions are generous. COMMERCIAL CAR JOURNAL has a feeling that the industry will consider them conservative. If any readers have made studies along these lines, we would appreciate hearing from them.

Truck Production & Wholesale Value (U. S. and Canada)

Year	Number†	Value‡
1904	411	\$946,947
1905	450	970,000
1906	500	1,050,000
1907	700	1,380,000
1908	1,500	2,550,000
1909	3,255	5,230,023
1910	6,000	9,660,000
1911	10,681	21,000,000
1912	22,000	43,000,000
1913	23,500	44,000,000
1914	25,375	45,098,464
1915	74,000	125,800,000
1916	92,130	161,000,000
1917	128,157	220,982,668
1918	227,250	434,168,992
1919	275,943	423,326,621
1920	321,789	423,249,410
1921	164,304	169,914,098
1922	277,140	231,282,063
1923	426,505	317,476,940
1924	434,140	326,706,496
1925	557,056	470,634,763
1926	556,818	468,752,769
1927	497,020	435,072,641
1928	588,983	459,045,380
1929	826,817	595,504,039
1930	599,991	405,940,915
1931	434,176	272,746,305
1932	245,282	142,264,003
1933	358,548	192,131,509
1934	599,397	332,913,985
1935	732,005	399,211,522
1936	818,377	481,961,420
1937	947,502	573,310,107
1938	530,425	365,723,677
1939	757,553	530,494,488
1940	889,884	690,549,884

Foreign assemblies of parts made in U. S. but assembled abroad are included in this table.

† Figures for 1921 to date are "factory sales" for U. S. plants and "production" for Canadian plants.

‡ Substantial part of the trucks reported comprises chassis only, without body; hence the value of bodies for these chassis is not included.

TRUCK PRODUCTION BY CAPACITIES—UNITS

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940†
1/2 ton or less	141,859	144,869	109,220	79,127	99,028	172,089	248,957	316,208	395,157	194,827	292,768	347,002
1 ton and less than 1 1/2	78,785	31,028	4,899	1,618	893	2,341	2,259	9,686	21,590	30,951	29,725	42,501
1 1/2 ton and less than 2	523,691	370,541	289,418	144,113	228,239	376,475	420,597	423,503	441,156	246,200	344,199	358,350
2 ton and less than 2 1/2	28,416	16,477	8,516	7,620	15,866	25,995	28,950	30,637	30,431	18,375	26,701	53,913
2 1/2 ton, less than 3 1/2	33,530	22,897	11,516	6,006	7,728	11,136	10,468	12,309	18,971	9,954	18,801	26,808
3 1/2 ton and less than 5	8,643	6,412	4,532	2,689	2,859	4,752	3,612	4,621	6,170	4,539	7,619	8,941
5 ton	2,384	1,094	908	1,407	580	1,219	3,824	5,567	9,248	5,820	7,365	8,540
Over 5 ton and special types	9,508	6,683	5,169	2,705	3,356	5,390	*12,341	*15,846	*24,789	*19,759	*30,375	*43,829
Total	826,817	599,991	434,176	245,285	358,548	599,397	732,005	818,377	947,502	530,425	757,553	889,884

* Includes Station Wagons. † Partly Estimated.

TRUCK PRODUCTION BY CAPACITIES—PER CENT

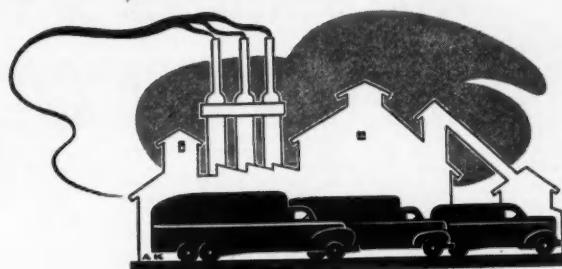
	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
1/2 ton or less	17.1	24.0	25.2	32.3	27.6	28.6	34.1	38.6	41.7	36.7	38.6	39.0
1 ton and less than 1 1/2	9.5	5.2	1.1	.6	.2	.4	.3	1.1	2.3	5.8	3.9	4.6
1 1/2 ton and less than 2	63.4	61.7	66.6	58.8	63.7	62.9	57.5	52.0	46.6	46.4	45.5	40.3
2 ton and less than 2 1/2	3.4	2.7	2.0	3.1	4.4	4.3	4.0	3.7	3.2	3.5	3.5	6.0
2 1/2 ton and less than 3 1/2	4.1	3.8	2.7	2.4	2.2	1.9	1.4	1.1	2.0	1.9	1.0	3.0
3 1/2 ton and less than 5	1.0	1.0	1.0	1.1	.8	.8	.5	.5	1.0	1.1	1.0	1.0
5 ton	.3	.2	.2	.6	.2	.2	.5	.7	1.0	1.0	1.0	1.0
Over 5 ton and special types	1.2	1.4	1.2	1.1	.9	.9	*1.7	*1.9	*2.6	*3.7	*4.0	*4.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Includes Station Wagons. † Partly Estimated.

TRUCK PRODUCTION BY MONTHS, BY YEARS (U. S. and Canada)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
January	57,765	40,938	35,475	21,160	19,429	44,870	64,529	68,655	74,995	58,062	64,093	74,016
February	65,950	52,925	41,863	24,291	15,592	44,952	63,204	65,938	72,939	51,464	63,606	71,690
March	79,587	69,031	47,671	21,274	18,508	61,068	70,520	81,875	96,016	52,106	77,107	75,285
April	91,855	74,477	53,138	28,539	27,975	67,532	69,338	91,049	100,324	47,818	68,066	76,807
May	94,940	62,080	47,805	27,491	35,132	60,348	59,324	79,379	96,965	41,575	63,793	74,139
June	98,164	51,466	41,496	23,572	43,446	48,292	65,785	81,185	91,820	41,857	66,964	67,787
July	78,703	44,960	35,386	15,137	39,310	44,546	61,582	71,383	83,996	38,336	62,750	74,005
August	59,985	43,296	32,890	15,319	42,601	53,890	58,942	63,794	87,802	35,259	40,868	41,533
September	54,683	46,557	31,876	20,003	35,874	46,335	33,229	47,496	55,033	20,174	27,560	56,703
October	66,235	41,928	22,406	14,157	30,772	49,643	80,203	35,359	31,939	22,380	65,079	86,104
November	50,368	37,493	20,118	12,560	19,106	35,107	60,720	54,628	67,508	54,638	73,407	93,068
December	28,582	34,840	24,052	21,782	30,801	42,814	64,629	77,836	88,165	66,756	84,260	98,747
Total	826,817	599,991	434,176	245,285	358,548	599,397	732,005	818,377	947,502	530,425	757,553	889,884

TRUCK INDUSTRY



NEW TRUCK REGISTRATIONS BY MAKES*

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Autocar	2,941	2,009	1,748	1,015	1,127	1,139	1,001	1,451	2,181	1,617	2,044	1,955
Brockway	4,533†	3,780†	1,685†	752	875	1,213	1,245	1,695	1,593	1,303	1,815	1,672
Chevrolet	160,892	118,253	99,600	60,784	99,880	157,507	167,129	204,344	183,674	119,479	169,457	194,038
Diamond T	3,590	2,888	2,483	2,250	4,139	5,440	6,454	8,750	6,118	4,393	5,412	6,358
Dodge	28,567	15,558	13,518	8,744	28,034	48,252	61,438	85,295	64,098	33,656	48,049	54,615
Federal	2,853	2,095	1,523	1,167	1,360	1,962	2,190	2,930	2,339	1,370	1,837	1,617
Ford	223,405	197,216	138,854	66,937	62,397	128,250	185,648	177,244	189,376	100,959	128,889	163,333
G. M. C.	14,248	9,004	6,919	6,359	6,602	10,449	11,442	26,980	43,522	20,152	34,908	42,488
Hudson							638	1,905	4,823	719	409	761
Indiana				957	1,252	729	882	1,705	1,096	435	178	
International	31,434	23,703	21,073	15,752	26,658	31,555	53,471	71,958	76,174	55,836	68,048	77,891
Mack	6,823	4,943	2,945	1,425	1,652	1,830	1,515	4,226	5,613	4,406	6,670	7,754
Plymouth							680	2,420	13,709	6,652	8,294	9,573
Reo	12,894	6,427	5,166	3,187	3,042	5,035	5,101	4,227	4,254	2,929	853	625
Sterling	1,577	1,244	739	227	108	134	174	277	311	267	326	341
Stewart	2,163	2,315	1,394	867	684	736	880	1,280	1,148	390	70	
Studebaker	1,661	1,518	3,495	2,430	2,407†	1,697	2,100	3,279	5,320	2,000	2,110	1,207
White	6,121	4,395	2,561	2,138	1,384	3,963	3,304	5,757	5,433	3,514	4,558	7,344
Willys	6,536	4,264	3,131	1,132	233	25	2,280	2,441	1,122	1,889	1,634	2,291
All Others	16,819	11,107	7,050	4,290	4,035	3,970	2,901	3,480	3,861	3,383	3,187	3,466
Total	527,057	410,699	313,984	180,413	245,869	403,886	510,683	611,644	618,249	365,349	486,748	576,327

† Includes Indiana.

† Includes Rockne.

* Data from R. L. Polk & Co.

NEW TRUCK REGISTRATIONS BY STATES*

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Alabama	10,456	6,186	3,536	1,992	4,054	6,051	9,925	13,187	12,874	7,041	11,978	12,928
Arizona	3,061	1,899	1,295	586	1,086	2,167	3,126	3,510	3,659	2,051	2,478	2,838
Arkansas	7,911	3,476	2,613	1,467	3,638	4,960	7,383	9,435	10,836	5,909	9,200	10,680
California	30,835	26,930	19,992	10,732	13,788	20,496	28,943	33,656	35,901	23,849	25,656	32,397
Colorado	6,382	5,840	3,887	2,001	2,438	5,195	6,086	9,060	8,411	4,771	5,935	6,308
Connecticut	7,828	5,928	5,540	3,056	4,246	6,124	7,318	8,240	7,767	4,422	5,466	6,688
Delaware	1,444	1,205	967	597	828	1,115	1,425	1,723	1,882	1,161	1,496	1,630
District of Columbia	2,328	1,850	2,202	1,368	1,362	1,979	2,492	2,940	2,857	1,753	2,514	2,614
Florida	5,395	6,121	5,255	2,894	4,186	6,046	8,274	9,412	10,722	6,540	9,375	12,485
Georgia	6,768	4,998	4,779	2,544	5,260	7,921	10,887	12,941	12,998	6,818	11,702	15,468
Idaho	2,572	2,389	1,620	673	1,545	2,817	4,004	4,939	4,454	2,613	3,346	3,854
Illinois	26,594	20,037	14,786	7,063	11,764	17,584	23,046	31,123	30,451	18,055	25,353	29,535
Indiana	14,462	10,534	9,025	4,849	6,121	11,123	18,009	20,027	18,269	9,899	16,857	16,575
Iowa	11,445	10,038	7,899	4,154	5,449	9,860	12,754	12,999	12,449	8,940	12,245	13,790
Kansas	12,648	9,298	5,550	3,119	4,292	7,170	9,605	11,406	12,409	7,980	7,079	9,815
Kentucky	6,037	5,368	4,326	2,619	4,195	6,815	9,089	10,870	11,597	7,244	8,808	10,490
Louisiana	7,314	4,705	4,311	1,844	2,882	5,359	7,201	9,753	10,111	6,155	8,185	9,695
Maine	4,785	4,521	4,600	2,240	2,614	4,262	4,104	5,337	5,658	3,315	4,317	5,278
Maryland	7,055	6,038	4,664	2,953	3,618	5,457	6,657	7,382	7,783	4,741	6,307	8,054
Massachusetts	16,969	13,711	12,609	7,290	9,511	12,887	14,514	15,350	16,235	9,459	12,831	14,392
Michigan	25,585	15,618	10,722	6,402	9,085	16,281	21,104	24,840	24,449	11,258	17,704	21,622
Minnesota	11,262	10,292	7,580	4,658	5,722	9,255	12,740	14,144	13,555	8,674	10,528	12,566
Mississippi	6,977	5,518	2,137	1,476	2,752	5,414	6,573	10,367	11,176	5,826	8,472	10,604
Missouri	16,047	14,844	10,979	7,645	8,535	12,920	16,200	20,142	19,170	11,718	16,338	19,701
Montana	4,338	2,596	1,874	1,150	2,055	4,215	5,939	5,930	5,044	4,112	4,561	5,359
Nebraska	8,144	6,957	4,540	2,108	2,713	5,411	6,297	6,996	6,202	4,664	5,449	6,146
Nevada	934	635	648	320	233	638	1,006	1,210	1,167	731	676	1,133
New Hampshire	2,491	2,290	2,038	1,152	1,783	2,731	2,490	3,196	3,022	1,759	2,748	3,012
New Jersey	17,587	14,764	13,051	7,505	7,401	11,444	13,165	16,935	18,446	11,691	12,725	14,710
New Mexico	2,157	2,006	1,560	817	1,395	3,150	4,058	4,545	5,099	2,911	3,732	4,119
New York	46,984	38,951	32,792	19,943	20,200	30,383	35,805	39,159	41,922	26,656	32,109	35,721
North Carolina	9,618	6,483	6,821	3,620	6,597	11,185	13,835	14,286	15,691	9,309	12,867	14,780
North Dakota	4,144	2,419	1,436	786	1,107	2,389	3,144	2,680	3,193	2,463	2,740	3,790
Ohio	27,338	20,111	14,291	8,753	11,150	20,487	22,772	30,023	28,440	15,261	22,536	28,509
Oklahoma	12,937	8,112	4,060	2,594	4,941	8,944	11,768	14,737	14,702	8,956	10,198	11,484
Oregon	5,619	4,193	3,099	1,451	2,488	3,790	5,964	8,050	7,559	4,064	5,873	7,212
Pennsylvania	37,259	30,120	23,396	15,618	19,991	29,891	32,097	41,919	39,150	21,044	28,915	36,107
Rhode Island	2,953	2,116	2,027	1,152	1,598	2,035	2,058	2,594	2,749	1,531	2,263	2,664
South Carolina	4,760	3,709	2,959	1,213	2,604	4,228	5,481	6,091	7,257	4,305	6,431	7,634
South Dakota	4,160	3,093	1,673	704	996	2,252	3,020	2,962	2,659	2,003	2,752	3,407
Tennessee	5,851	5,087	3,285	2,031	3,623	6,386	9,518	11,062	10,799	6,476	9,732	12,797
Texas	33,361	22,237	15,742	8,519	13,889	24,654	32,437	38,903	40,905	25,892	33,428	38,599
Utah	2,610	2,218	1,591	758	1,568	2,530	3,486	3,571	3,298	1,984	3,034	3,095
Vermont	2,027	1,670	1,339	972	1,311	2,048	2,394	2,306	2,444	1,228	2,076	2,325
Virginia	9,989	8,917	6,823	4,105	5,667	8,508	11,402	12,904	12,928	7,906	10,391	12,748
Washington	8,325	6,680	4,640	2,471	4,002	6,199	9,076	10,666	10,222	5,416	7,149	9,306
West Virginia	5,299	4,551	3,562	1,844	2,988	5,847	6,646	9,181	9,269	4,694	6,604	7,800
Wisconsin	14,393	12,058	8,399	4,522	5,411	9,313	13,118	16,237	16,412	8,516	10,949	13,051
Wyoming	1,461	1,182	1,174	613	937	1,799	2,206	2,661	2,627	1,708	2,232	2,432
Total	527,057	410,699	313,984	180,413	245,869	403,886	510,683	611,644	618,249	365,349	486,748	576,327

* Data from R. L. Polk & Co.

VITAL STATISTICS OF THE TRUCK INDUSTRY—Continued

U. S. NEW TRUCK REGISTRATIONS BY MONTHS, BY YEARS

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January	29,900	30,236	24,415	14,776	11,709	22,903	34,759	43,760	47,618	31,995	37,715	45,650	January
February	32,637	31,880	23,466	14,558	9,707	24,476	34,797	40,301	41,843	27,551	34,102	41,336	February
March	46,368	42,199	30,609	16,874	9,934	33,884	41,511	52,428	60,301	37,255	45,093	63,093	March
April	56,299	47,029	36,848	17,784	17,301	38,882	46,785	64,956	67,832	35,682	46,063	55,982	April
May	52,874	43,286	33,496	18,696	20,925	39,631	47,968	62,183	65,857	32,937	45,381	51,553	May
June	45,114	33,531	28,496	17,876	23,254	34,768	48,243	56,651	58,626	30,647	40,482	43,504	June
July	57,943	39,904	30,102	14,731	30,642	37,490	51,243	63,695	61,666	33,475	44,747	50,913	July
August	52,557	33,767	27,070	15,081	28,799	40,790	50,355	59,222	60,872	34,231	43,523	48,980	August
September	46,660	33,933	25,967	14,967	31,269	37,225	41,390	54,611	54,711	26,570	32,983	39,224	September
October	49,899	34,237	24,685	15,166	28,058	40,678	37,439	41,220	40,246	19,589	37,923	48,356	October
November	33,631	220,12	15,553	10,392	18,691	28,689	36,935	30,255	27,248	23,943	41,286	46,618	November
December	23,275	18,685	13,177	9,522	15,560	24,070	39,258	42,162	31,409	31,474	37,460	51,095	December
Total	527,057	410,699	313,884	180,413	245,869	403,886	510,683	611,844	618,249	365,340	486,748	576,327	Total

TOTAL TRUCK REGISTRATIONS BY STATES

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Alabama	37,832	37,976	33,972	31,575	29,638	34,101	38,989	44,272	53,070	50,780	54,947	58,707
Arizona	10,686	12,045	12,633	14,687	14,569	16,791	17,964	20,183	22,973	22,998	24,083	24,500
Arkansas	39,732	26,986	31,275	22,989	32,980	35,700	40,107	50,131	59,283	53,789	60,535	64,199
California	214,033	230,837	245,213	234,177	220,087	237,566	253,908	*126,379	*128,132	*300,483	*309,855	*326,999
Colorado	28,501	31,662	32,082	30,357	27,433	27,858	28,430	*31,930	32,795	31,447	30,636	30,298
Connecticut	50,008	51,196	52,227	51,388	52,564	55,878	62,232	60,653	68,070	63,910	66,273	74,456
Delaware	10,232	10,576	*9,991	*8,686	*8,485	*9,394	*9,692	*10,010	*10,314	*10,519	*11,248	*11,030
District of Columbia	15,995	16,943	18,185	18,288	16,742	17,263	17,610	19,397	18,862	14,267	13,718	13,500
Florida	57,293	53,096	51,724	37,955	45,019	55,359	57,199	65,738	70,308	71,871	76,320	79,000
Georgia	48,543	47,119	46,284	42,050	51,212	60,282	66,079	73,269	78,803	76,154	85,520	91,321
Idaho	13,676	14,551	15,435	14,030	14,884	17,661	21,371	25,852	28,208	27,809	31,380	33,382
Illinois	*203,335	207,584	201,509	177,820	*186,186	*174,285	*185,477	*208,926	*220,639	*222,582	*232,688	*228,889
Indiana	125,349	128,397	129,826	122,019	116,361	122,791	132,767	131,767	140,292	122,168	129,695	130,000
Iowa	69,531	72,190	78,414	74,882	69,490	75,350	80,529	82,840	86,636	*92,884	*93,139	*101,244
Kansas	*73,694	*83,139	*80,484	*71,778	*72,404	75,565	*80,068	*87,113	*93,046	*97,744	*98,616	*102,665
Kentucky	34,132	35,841	34,939	31,621	32,111	37,445	43,613	51,840	59,341	63,373	69,629	75,096
Louisiana	46,303	44,697	47,783	41,853	42,007	44,779	49,398	76,251	80,630	80,167	84,476	88,973
Maine	36,544	37,435	38,771	36,203	35,271	37,693	38,079	39,276	43,171	42,663	41,673	42,000
Maryland	38,839	37,832	36,080	41,527	34,728	45,351	46,528	53,398	62,014	53,926	58,027	60,044
Massachusetts	98,266	102,918	103,888	102,959	99,954	98,508	100,411	102,400	104,316	104,134	106,624	109,462
Michigan	*175,944	*167,156	*152,635	*123,273	*121,639	*123,405	*127,283	*139,520	*146,117	*113,631	*90,796	*117,500
Minnesota	99,696	108,070	108,435	101,650	99,130	103,882	105,861	114,448	117,632	115,970	118,227	124,602
Mississippi	32,649	33,651	*30,721	*25,164	32,924	34,116	33,308	43,357	53,072	51,488	57,097	58,875
Missouri	85,443	*81,455	*95,975	*90,265	*103,795	107,709	115,819	*128,425	*134,457	*133,666	*141,609	*182,924
Montana	28,102	25,619	*24,037	*20,521	*27,460	*31,087	*35,542	*39,311	*40,081	*41,138	*44,480	*47,964
Nebraska	42,280	58,642	59,848	52,294	53,947	56,560	59,084	62,133	63,667	66,988	65,632	66,300
Nevada	6,613	6,257	6,950	6,527	6,927	6,381	6,875	*7,680	*8,092	*7,525	8,811	6,571
New Hampshire	13,980	19,028	18,671	17,378	19,872	22,382	23,455	*22,023	23,768	*23,597	*24,964	*25,399
New Jersey	133,373	133,154	133,361	128,604	122,228	123,351	124,866	130,642	134,458	132,714	132,819	136,887
New Mexico	2,374	*13,700	15,884	15,020	15,290	16,112	18,245	22,731	31,117	26,915	28,468	30,090
New York	341,191	340,749	330,813	313,765	298,508	298,379	306,919	326,404	333,543	327,474	350,693	317,507
North Carolina	52,951	56,108	54,575	50,262	49,660	54,766	57,931	65,000	73,383	74,211	81,068	86,200
North Dakota	28,954	27,636	26,588	23,590	*25,342	26,315	26,780	29,650	32,084	33,061	34,544	37,019
Ohio	206,432	204,270	*191,929	167,492	*158,189	*159,845	*170,954	*172,273	*180,484	*177,314	*184,223	*186,000
Oklahoma	60,390	59,384	54,585	44,884	65,957	73,928	82,855	90,638	98,675	92,943	98,172	103,391
Oregon	21,876	22,437	22,950	34,477	32,208	41,411	42,584	49,746	60,660	59,829	62,749	67,756
Pennsylvania	217,408	218,687	219,812	216,334	219,497	215,016	220,026	249,637	257,330	255,654	269,062	263,112
Rhode Island	19,999	19,631	19,565	18,416	17,965	18,332	18,428	19,458	19,768	20,010	19,899	20,743
South Carolina	25,591	26,261	23,439	19,722	17,795	20,877	29,761	33,525	39,835	41,379	44,142	39,070
South Dakota	*22,780	24,977	33,516	19,542	22,764	23,832	26,931	28,172	28,768	28,494	30,282	32,295
Tennessee	*32,734	37,823	33,970	31,434	33,849	37,755	42,031	49,368	55,736	61,724	67,053	65,000
Texas	182,957	206,757	210,991	191,462	188,676	226,276	257,055	285,839	294,639	316,757	335,467	350,208
Utah	17,000	17,869	17,577	16,096	16,348	17,103	17,587	22,000	21,094	22,432	25,209	23,584
Vermont	8,559	8,228	8,453	8,309	7,924	8,612	9,031	8,682	9,029	9,042	9,576	9,628
Virginia	58,680	57,307	56,633	62,344	57,266	57,268	60,376	57,689	67,547	66,410	68,723	74,720
Washington	62,348	63,188	60,082	63,626	62,548	64,321	66,657	79,500	84,577	83,204	85,494	88,000
West Virginia	40,173	40,373	39,359	32,916	33,415	27,253	29,305	36,908	44,558	43,785	49,289	51,414
Wisconsin	104,055	105,110	113,773	108,047	104,347	120,180	130,144	150,779	145,822	135,413	141,590	150,000
Wyoming	8,800	9,922	10,713	9,879	10,643	13,102	14,593	15,592	17,368	17,589	18,090	19,062
TOTALS	3,379,854	3,486,019	3,466,571	3,229,315	3,227,357	3,409,335	3,655,705	3,981,755	4,107,244	4,184,109	4,353,329	4,497,585

* Includes buses.

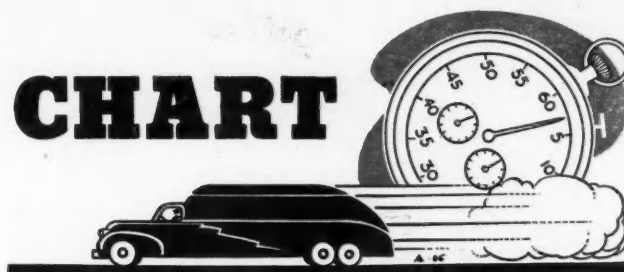
† Large increase due to reclassification of trucks previously carried as passenger cars.

‡ Includes light commercial vehicles registered as passenger cars.

TOTAL U. S. TRUCK REGISTRATIONS BY YEARS (1904-1940)

Year	Registrations	% Gain	Year	Registrations	% Gain	Year	Registrations	% Gain	Year	Registrations	% Gain
1904	410	...	1912	41,400	107	1920	1,006,082	27	1927	2,914,019	5
1905	800	46	1913	83,800	54	1921	1,117,100	11	1928	3,113,999	7
1906	1,100	83	1914	85,600	34	1922	1,375,725	23	1929	3,379,854	8
1907	1,700	55	1915	130,000	59	1923	1,612,569	17	1930	3,498,019	3
1908	3,100	82	1916	215,000	68	1924	2,134,724	32	1931	3,466,571	-8
1909	6,050	95	1917	326,000	52	1925	2,440,854	14	1932	3,229,315	-7
1910	10,000	65	1918	525,000	61	1926	2,764,222	13	1933	3,227,357	-0.6
1911	20,000	100	1919	794,372	51						

TRUCK SPEED CHART



THE accompanying chart will determine the vehicle speed for any given engine speed when the tire loaded radius and rear axle reduction are known.

To Determine Loaded Tire Radius

The loaded tire radius can be obtained from tire manufacturers' literature or it can be measured. It is the distance from the center of the wheel hub to the ground.

To Determine Truck Speed

1. Locate the point on the scale across the bottom of the chart which corresponds

to the loaded radius of the tire size used.

2. From this point proceed vertically upward to intersection with inclined line representing rear axle reduction ratio.

3. From this point proceed horizontally right or left to the intersection with line representing engine speed.

4. From this point proceed vertically upward to scale across top of chart where the m.p.h. speed of the vehicle is shown.

To Determine Engine Speed

5. Locate the point on the scale across the bottom of the chart which corresponds

to the loaded radius of the tire size used.

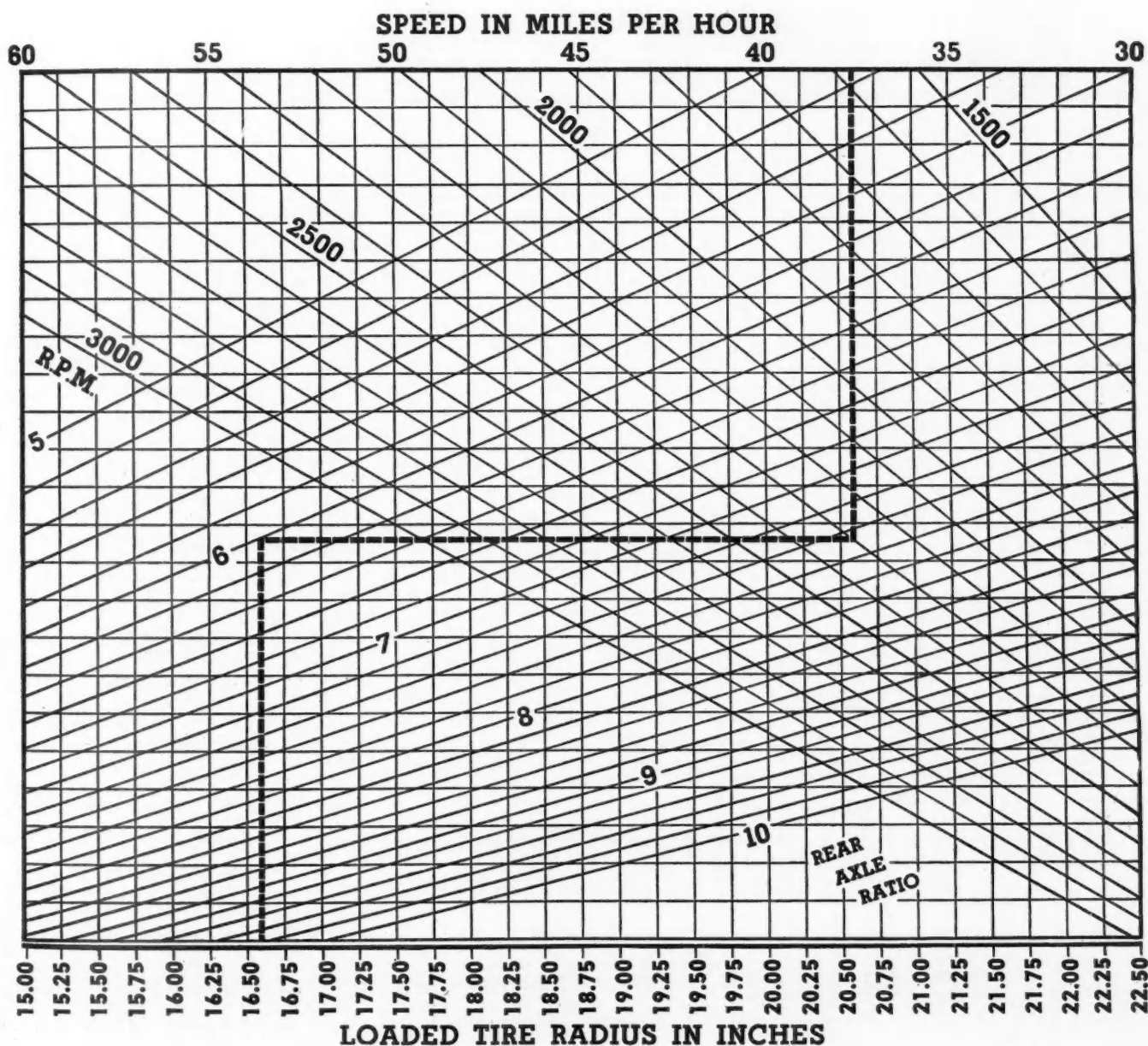
6. From this point proceed vertically upward to intersection with inclined line representing rear axle reduction ratio.

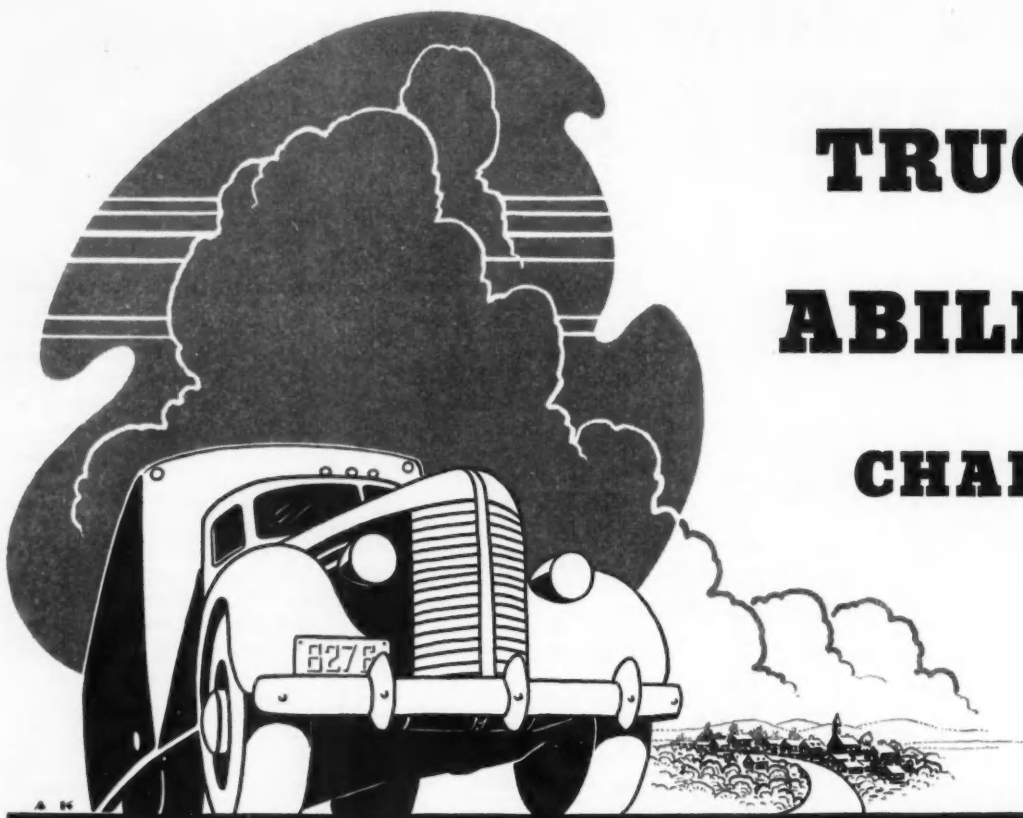
7. Through this point draw horizontal line.

8. Locate given truck speed on scale across top of chart.

9. Proceed vertically downward to intersection with drawn horizontal line which will indicate required engine speed.

The dotted line on the chart simply represents an example of how the chart can be used.





TRUCK ABILITY CHART

THE accompanying chart makes it easy to determine the maximum grades which a truck of known engine torque, rear axle ratio, wheel diameter (including tire) and gross weight will climb in either high or low gear. It can also be used to determine the maximum net engine torque necessary to climb a hill of any given grade if the rear axle ratio, transmission low gear ratio, gross weight and wheel size are known. Used in conjunction with the Speed chart and engine torque curve, the speed of a given truck up a given grade can be determined. The chart is easy to use and does not require a knowledge of mathematics or engineering.

To Find Grade Ability

1. Locate on horizontal scale across bottom of chart, the point corresponding to maximum net engine torque.
2. From this point proceed vertically upward to intersection with inclined line representing the rear axle ratio.
3. From this point proceed horizontally right or left to intersection with inclined line representing wheel diameter.
4. From this point proceed vertically upward to intersection with inclined line representing gross vehicle weight.
5. From this point proceed horizontally to scale on left side of chart where maximum grade ability in high gear may be read.

To Find Grade Ability in Low

6. From point of intersection described in Instruction 4 proceed horizontally left or right to intersection with inclined line representing low gear ratio.
7. From this point proceed vertically upward to scale across top of chart where low gear grade ability may be read.

Example

The dotted lines in the chart correspond to an example. The engine torque is 288 lb. ft., the axle ratio is 6.5-1, the wheels are 34 in. in diameter and the gross weight is 19,000 lb. To work the example:

8. Locate 288 lb. ft. on the torque scale across the bottom of the chart.
9. From this point proceed vertically upward to the point of intersection with the line representing 6.5 rear axle ratio.
10. From this point proceed horizontally right to the intersection with the line representing 34 in. wheels.
11. From this point proceed vertically upward to the intersection with the line representing 19,000 lb.
12. From this point proceed horizontally left to the scale which gives the answer of 4.75 per cent grade.
13. If the low gear reduction is 6.5 stop at intersection with line representing 6.5 in proceeding left in Instruction 12.

14. From this point proceed vertically upward to the low gear scale which gives the answer of 39 per cent grade.

Both of these answers are correct. Any grade ability problem can be worked out on this chart if the factors outlined are known and they fall within the range of the chart.

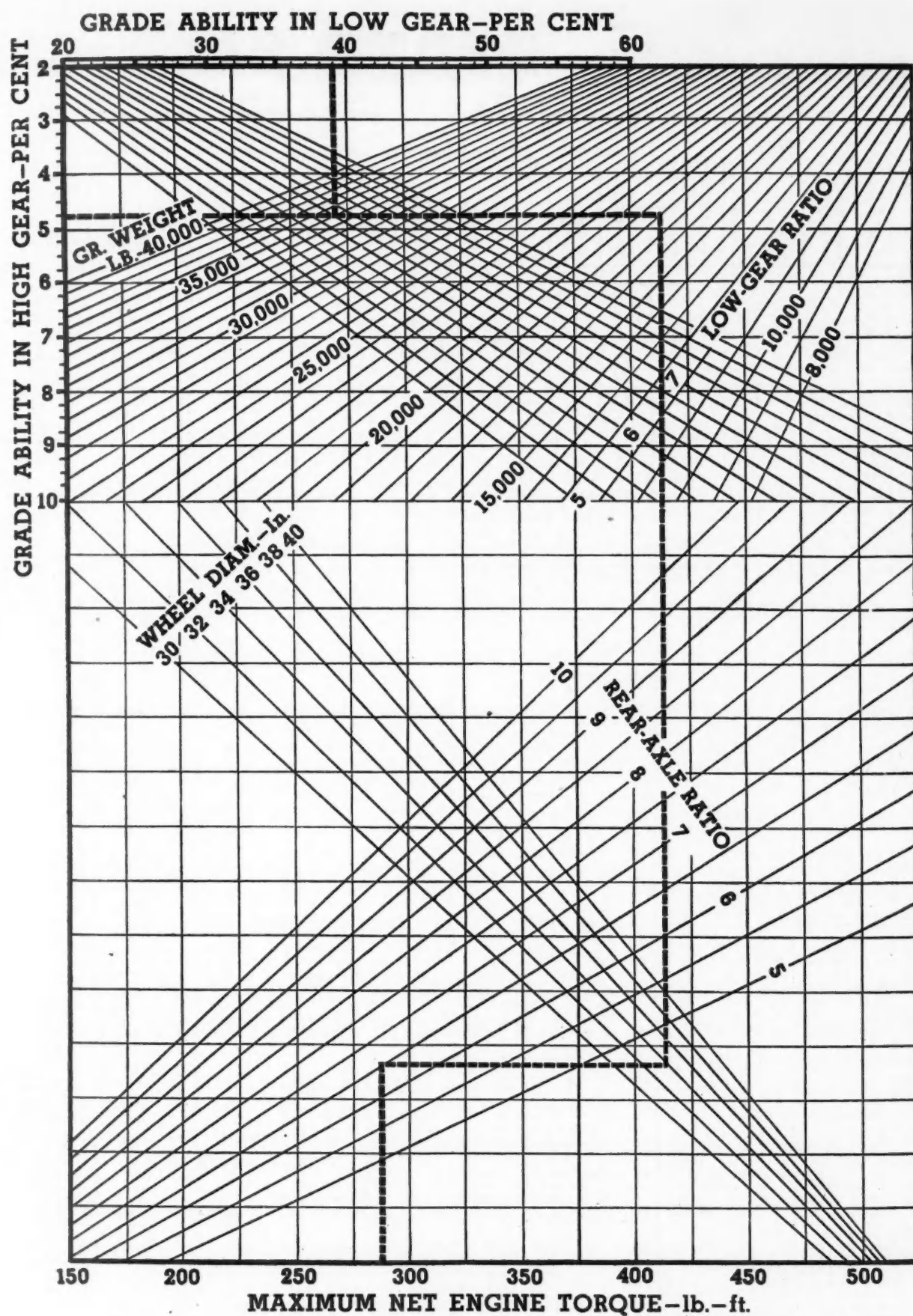
To Find Required Torque

If the required hill climbing ability is known and it is desired to determine the maximum net engine torque required to give this hill climbing ability simply work the chart backward.

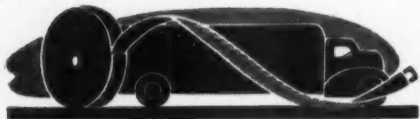
To Find Other Factors

To find Gear Ratio required for a given grade, or Wheel Diameter Permissible to Climb a Given Grade, or Cross Vehicle Weight Limit for a Given Grade when other factors are known, locate the maximum net engine torque and operate the chart in the usual manner to the line representing the unknown quantity. Then locate the known grade ability and work in reverse of the usual operation until that line intersects with the one resulting from forward operation. The intersection of the lines in the vicinity of the slanting line representing the unknown factor will determine the value of this factor.

TO FIGURE: 1. Grade Climbing Ability of a Truck with a Given Load
2. Engine Torque Required to Climb a Given Grade . . .



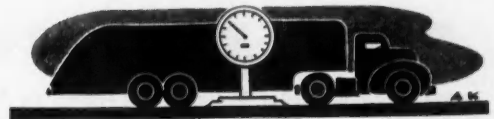
3. Gear Ratio Required for a Given Grade . . . 4. Wheel Diameter Permissible to Climb a Given Grade 5. Gross Vehicle Weight Limit for a Given Grade



STATE SIZE AND

STATE	SIZE RESTRICTIONS (K)							GROSS WEIGHT		(See NOTE)	PRACTICAL GROSS WEIGHT LIMITS (K)													(In thousands of pounds)
	Width (In Inches)	Height (In Feet)	LENGTH			Number of Trailers (Semi-Trailer = 1/2)	Minimum Tandem Axle Spacing	(LEGAL LIMITS)			(Where No Distinction is Made Between Pneumatic and Solid Tire Limits, Below Limits Apply to Both)													
			Single Unit	Tractor Semi-Trailer	Other Combinations			Per Inch of Tire Width	Per Axle (1000 lb.)		4-Wheel Single Unit	6-Wheel Single Unit	4-Wheel Tractor 2-Wheel Semi-T.	4-Wheel Tractor 4-Wheel Semi-T.	6-Wheel Tractor 4-Wheel Semi-T.	4-Wheel Truck 4-Wheel Trailer	4-Wheel Truck 6-Wheel Trailer	6-Wheel Truck 4-Wheel Trailer	6-Wheel Truck 6-Wheel Trailer	4-Wheel Tractor 2-Wheel Semi-T. 4-Wheel Trailer	4-Wheel Tractor 4-Wheel Semi-T. 4-Wheel Trailer	6-Wheel Tractor 4-Wheel Semi-T. 6-Wheel Trailer		
Ala. TV	96	12 1/2	30	40	NP	1/2	NS	600	16	30	30	30	30	30	NP	NP	NP	NP	NP	NP	NP	NP	NP	
Ariz.	96	14 1/2	33	85	85	1 1/2	NS	700-P 500-S	18	22	34	40	44	56	44	56	56	68	62	66	90			
Ark. VXZ	96	12 1/2	35	45	45	1 or 1/2	40	Table	Table	46.9-IW	48.9-IW	53.9-IW	53.9-IW	53.9-IW	53.9-IW	53.9IW	53.9-IW	53.9-IW	53.9-IW	NP	NP	NP		
Cal. XZ	96	13 1/2	35	60	60	NR	40	NS-P 600-S	17	26	34	43	52	60	52	60	60	68	68	68	68			
Colo. X	96 102 b	12 1/2	38	40	50	1 1/2	40	NS-P 500-S	18-I 16-J	24	34	50.4	50.4	50.4	48	58	58	63	63	63	63			
Conn. TZ	96 e 102	12 1/2	40	40	NP	1/2	NS	NS-P 600-S	NS	32-P 26-S	40-P 26-S	40-P 26-S	40-P 26-S	40-P 26-S	NP	NP	NP	NP	NP	NP	NP	NP		
Del. TZ	96	12 1/2	33	60	60	1 1/2	NS	700	18-P 16-S r	26-P 22-S	36-PN 22-S	40-P 38-S	40-P 38-S	40-P 38-S	48-P 44-S	48-P 44-S	58-P 44-S	58-P 44-S	62-P 60-S	62-P 60-S	62-P 60-S			
D. C. VZ	96	12 1/2	33	33	50	NR	40	880	24.6 15.4 s	30.8-P	39.6-P	39.6-P	39.6-P	39.6-P	61.6-P	70.4-P	70.4-P	70.2-P	70.4-P	70.4-P	70.2-P			
Fla. Z	94	12	35	45	45	1 or 1/2	NS	550	NR	16-PQ 8-S	16-PQ 8-S	19-PQ 9.5-S	32-PQ 11-S	32-PQ 11-S	32-PQ 11-S	32-PQ 11-S	32-PQ 11-S	32-PQ 11-S	NP	NP	NP			
Ga. V ¹	96	12 1/2	30 e 35 f	85 e 45 f	85 e 45 f	1 1/2	NS	800	17.6	22 12.5-PL	39.6 12.5-PL	39.6 12.5-PL	44 12.5-PL	61.6 12.5-PL	44 25-PL	61.6 25-PL	61.6 25-PL	79.2 25-PL	61.6 25-PL	68 25-PL	101.2 25-PL			
Idaho V ¹	96	14	35	45	65	1 1/2	NS	800	18	28	42	42	56	60	56	68	68	68	68	68	68			
Ill. TV ^{1/2}	96	NS	35	35	40	1 1/2	40	800	16	24	40	40	40	40	56	56	72	72	72	72	72			
Indiana X	96	12	38	40	40	1 1/2	40	800	18	36	53.2	58	56	56	56	56	56	56	56	56	56			
Iowa TX	96	12	33	45	NP	1/2	40	NS	16-P 14-S	32-PW 28-S	35.2	43.6	40.6	40.6	NP	NP	NP	NP	NP	NP	NP			
Kansas X	96	12 1/2	35	35	45	1 or 1/2	40	NS	18-I 16-J	24 28 t	34	48.9	48.9	46.9	43	53	53	63	NP	NP	NP			
Ky. T	96	11 1/2	26 1/2	30	NP	1/2	NS	600	NR	18	18	18	18	18	NP	NP	NP	NP	NP	NP	NP			
La. Z	96	12 1/2	33	45	45	1 or 1/2	40	600	18-I 16-J	12 PL	20 PL	20 PL	20 PL	20 PL	20 PL	20 PL	32 PL	32 PL	NP	NP	NP			
Maine	96	12 1/2	40 h	40 h	40 h	1 or 1/2	NS	600	22-G	30	40	40	40	40	40	40	40	40	NP	NP	NP			
Md. Z	96	NR	NR	NR	NR	1 n	NS	700	18	26-P 42-S	36-P 42-S	42	42	42	52	62	62	72	68	68	78			
Mass. p	96 102 b	NR	33 j 28	40	NS	1 or 1/2	NS	800	NR	30-P 28-S	40	40	40	40	31-P 29-S	31-P 29-S	41	41	NP	NP	NP			
Mich. p	96 102 b	12 1/2	35	50	50	1 1/2	NS	700	18-P 16-S	36-PW 32-S	44-PW 39.2-S	54-PW 48-S	62-PW 55.2-S	70-PW 62.4-S	72-PW 64-S	80-PW 71.2-S	80-PW 71.1-S	88-PW 78.4-S	90-PW 80-S	98-PW 87.2-S	114-PW 101.6-S			
Minn. TZ	96	12 1/2	40	40	40	1 or 1/2	NS	NR	18-P u 10.8-S	36-PW 21.6-S	42-PW 25.2-S	54-PW 32.4-S	60-PW 36-S	66-PW 39.6-S	42-PW 25.2-S	42-PW 25.2-S	48-PW 28.8-S	48-PW 28.8-S	NP	NP	NP			
Miss. Z	96	12 1/2	40	40	55	1 or 1/2	40	700	18-I 16-J	22	30	30	30	30	30	30	30	30	NP	NP	NP			
Mo. Z	96	12 1/2	33	40	40	1 or 1/2	NS	600	16	24	24	38	38	38	48	48	48	48	NP	NP	NP			
Mont. XV ^{1/2}	96 102 b	13 1/2	35	60	60	1 or 1/2	40	600	18-P 16-S	46.9	46.9	64.4	64.4	64.4	64.4	64.4	64.4	64.4	NP	NP	NP			
Neb. T	96	12	35	42	45	1 1/2	NS	NS	16	32-W	32	40	40	40	48	48	48	48	48	48	48			
Nev. Z	NR	NR	NR	NR	NR	NR	42	600	NR	25	38	38	38	38	50	63	63	76	63	63	76			
N. H. Z	96	NR	33	45	45	NR	NS	800	18	28	40	40	40	40	40	40	40	40	40	40	40			
N.J. Z	96	12 1/2	35 U 28	45 56 U	50 56	1 or 1/2	NS	Table	Table	30	40 U 30	60	60	60	60	60	60	60	NP	NP	NP			
N. M. V ^{1/2}	96 100 b	12 1/2	35	45	45	1 or 1/2	40	700-P 500-S	18-I 16-J	36-IW 32-J	40.2-I 40.2-J	46.2-I 46.2-J	46.2-I 46.2-J	46.2-I 46.2-J	46.2-I 46.2-J	46.2-I 46.2-J	46.2-I 46.2-J	46.2-I 46.2-J	NP	NP	NP			
N. Y. X	96 106 b	13	35	50	50	1 or 1/2	46	800-P 640-S	22.4-P 17.9-S	36-P 28.9-S	44-P 35.2-S	58.4-P 46.7-S	61.5-P 49.2-S	61.5-P 49.2-S	61.5-P 49.2-S	61.5-P 49.2-S	61.5-P 49.2-S	61.5-P 49.2-S	NP	NP	NP			
N. C. Z	96	12 1/2	35	45i	45i	1 or 1/2	NS	600	18-I 16-J	20 L	40 L	40 L	40 L	40 L	40 L	40 L	40 L	40 L	NP	NP	NP			
N. D. TZ	96	12 1/2	40	40	40	1 or 1/2	NS	600	16	40	40	40	40	40	40	40	40	40	NP	NP	NP			
Ohio	96	12 1/2	35	40	60	NR	NS	650	18-P 16-S	24-P 20-S	24-P 20-S	42-P 36-S	42-P 36-S	42-P 36-S	48-P 40-S	48-P 40-S	48-P 40-S	48-P 40-S	66-P 56-S	66-P 56-S	66-P 56-S			

WEIGHT LIMITS



STATE	SIZE RESTRICTIONS (K)							GROSS WEIGHT		(See NOTE)	PRACTICAL GROSS WEIGHT LIMITS (K)												(In thousands of pounds)		
	Width (In Inches)	Height (In Feet)	LENGTH			Number of Trailers (Semi-Trailer = 1/2)	Minimum Tandem Axle Spacing	(LEGAL LIMITS)		(Where No Distinction is Made Between Pneumatic and Solid Tire Limits, Below Limits Apply to Both)															
			Single Unit	Tractor Semi-Trailer	Other Combinations			Per Inch of Tire Width	Per Axle (1000 lb.)	4-Wheel Single Unit	6-Wheel Single Unit	4-Wheel Tractor 2-Wheel Semi-T.	4-Wheel Tractor 4-Wheel Semi-T.	6-Wheel Tractor 4-Wheel Semi-T.	4-Wheel Tractor 4-Wheel Trailer	4-Wheel Tractor 6-Wheel Trailer	6-Wheel Tractor 4-Wheel Trailer	6-Wheel Tractor 6-Wheel Trailer	4-Wheel Tractor 4-Wheel Semi-T. Trailer	4-Wheel Tractor 4-Wheel Trailer	6-Wheel Tractor 4-Wheel Trailer	6-Wheel Tractor 6-Wheel Trailer			
Okl.	96	12 1/2	45	45	45	1 1/2	NS	800	NS	24	24	47	47	47	47	47	47	47	47	47	47	47	47	47	47
VXZ Ore.	96	11	35	35	50	NR	40	800	18 w 18 x	34	46.9 w 46.9 x	46.9 w 46.9 x	48.9 w 46.9 x	46.9 w 46.9 x	54	54	54	54	54	54	54	54	54	54	54
Pa.	96	12 1/2	33	45	50	1 or 1/2	36	800	18 y	26 H	36 H	39	39	39	52	62	62	62	62	NP	NP	NP	NP	NP	NP
R. I.	102	12 1/2	NR	45	45	1 or 1/2	NS	800	22.4	32-P 28-S	40	40	40	40	64-P 56-S	72-P 68-S	72-P 68-S	80	NP	NP	NP	NP	NP	NP	NP
S. C.	96	12 1/2	35	45	45	1 or 1/2	40	NR	18-I 16-J	25	25	40	40	40	40	40	40	40	40	NP	NP	NP	NP	NP	NP
S. D.	96	13	30	40	40	1 or 1/2	NS	NR	NR	20	24	30	30	30	30	30	30	30	30	NP	NP	NP	NP	NP	NP
Tenn.	96	12	27	35	35	1 or 1/2	NS	NS	16	30	30	30	30	30	30	30	30	30	30	NP	NP	NP	NP	NP	NP
★ Tex.	96	12 1/2	35	45	45	1 or 1/2	NS	600	NR	38	38	38	38	38	38	38	38	38	38	NP	NP	NP	NP	NP	NP
XZ Utah	96	14 1/2	45	60	60	1 or 1/2	NS	800	18-P 13.5-S	36-P 27-SW	53.9-P 40.4-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	64.4-P 48.3-S	NP	NP	NP	NP	NP	NP
Vt.	96	12	50	50	50	1 or 1/2	40	500	16	28 M 16	40 M 16	40 M 16	40 M 16	40 M 16	40 M 16	40 M 16	40 M 16	40 M 16	40 M 16	NP	NP	NP	NP	NP	NP
Va.	96	12 1/2	33	45	45	1 or 1/2	40	550	16	24	35	35	35	35	35	35	35	35	35	NP	NP	NP	NP	NP	NP
AXZ Wash.	96	12 1/2	35	60	60	1 or 1/2	42	500	18	24	34	42	50	60	46	58	58	58	58	NP	NP	NP	NP	NP	NP
W. Va.	96	12 1/2	35	45	45	NR	40	NS	18-PB 14-SB	36-PWB 28-SB	54-PWB 42-SB	54-PWB 42-SB	72-PWB 56-SB	90-PWB 70-SB	72-PWB 56-SB	90-PWB 70-SB	90-PWB 70-SB	102.4PB 81.9-SB	90-PWB 70-SB	102.4PB 81.9-SB	102.4PB 81.9-SB	102.4PB 81.9-SB	102.4PB 81.9-SB	102.4PB 81.9-SB	
VZ Wisc.	96 d	12 1/2	33	45	45	1 or 1/2	40	800	19-C 12-D	24-Ck 15-D	36-C 22.5-D	43-C 27-D	48-C 30-D	60-C 37.5-D	48-C 30-D	60-C 37.5-D	60-C 37.5-D	72-C 45-D	NP	NP	NP	NP	NP	NP	NP
X Wyo.	96	12 1/2	40	45	45	NR	NS	800	18	36	43.2	46.2	45.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2

★—N.D. and Texas weights revised on basis of new laws.
i—See explanation in Note at right.
a—May exceed, when solids changed to pneumatics.
b—At rear tires, when solids changed to pneumatics.
c—Regulated "for hire" vehicles.
d—104 inches for urban buses.
e—Permissible length of private vehicles.
f—Permissible length of "for hire" vehicles.
g—Buses allowed 35 ft. length.
h—Trailers are limited to 26 feet.
i—Exclusive of bumpers.
j—Single units with over 2 axles.
k—Special limitations, vehicles with 2 driving axles.
l—NR—when operated under 10 miles per hour.
m—Graduated according to tire width.
n—13,000 lbs. on tandem axles 3 ft. 6 in. apart; applies June 1 to February 28; differs with season.
o—500 lbs. when total tires under 30 inches wide.
p—Permissible weight on tandem axles.
q—Permissible on axles spaced under 12 feet.
r—Dual tires over 8 inches wide.
s—12,000 lbs. when axles spaced under 8 feet apart.
t—Permissible weight on paved highways.
u—Permissible weight on unpaved highways.
v—16,500 lbs. on rear, 8,000 lbs. on front axle of 6-wheeled vehicle.
z—The city of Clinton, Ill., limits gross weight of trucks to 12,000 lbs.

Table—There is a table of axle weights based upon tire widths.
NP—Not permitted.
NR—No restriction.
NS—Not specified.
P—Pneumatic tires.
PL—Pay load.
S—Solid tires.
A—On 2-axle truck or semi-trailer; 14,000 lbs. on trucks or 12,000 lbs. on trailers with over 2 axles.
B—In "Industrial Areas"—varies for different "areas."
C—Permissible on "Class A" highways.
D—Permissible on "Class B" highways.
E—Trailers permitted 32,000 lbs.
F—Double above when transporting property to or from receiving or loading point of a common carrier.
G—Axles less than 10 ft. apart limited to 16,000 lbs.
H—Maximum shown—gross depends on chassis weight.
I—Permissible on balloon tires.

NOTE ON "W" AND SHADED SQUARES

Except when shown in squares shaded with parallel lines or when followed by the letter "W," the above gross weight limits are the limits fixed by state law.

When shown in shaded squares the above limits are computations made by the National Highway Users Conference to show what it considers to be practical gross weights where gross weights are arrived at by application of one of the formulae shown below under Footnote "X." In making these computations, wheel base was arrived at by deducting 8 ft. total over-hang front and rear from permissible overall length of unit or combination; tandem axles were considered to be a minimum permissible distance apart; H-20 bridge formula was used in West Virginia. When actual over-hang is less than 8 ft. additional gross weight will be possible.

When followed by the letter "W," the limits shown are maximum possible weights where gross weight is determined by permissible axle weight. These limits are possible only when each axle carries a gross weight equal to the permissible axle limit as shown. Actual gross weight in any case will be reduced by whatever amount any axle fails to reach the maximum axle weight as shown above.

J—Permissible on other than balloon tires.
K—May exceed on designated highways with permit.
L—Buses permitted 22,500 maximum net weight.
M—On state highways.
N—38,000 lbs. with pneumatic tires, 3 axles, 2 hubs and brakes on each hub.
Q—Different limits for "for hire" vehicles.
T—With the following exceptions full trailers are permitted the same gross weight as other single units:—
Ala., Iowa, Conn., Ky.—Full trailers prohibited.
Del.—Trailers limited to 22,000 lbs. gross.

Ill.—All trailers limited to 32,000 lbs. gross.
Mass.—Trailers limited to 1,000 lbs. capacity.
Minn.—Trailers limited to 6,000 lbs. gross.
Nebr.—All trailers limited to 16,000 lbs. gross.
N. Dak.—Trailers, 35,000 lbs.
Weight of trailers is limited by axle limitations and formula, in states determining gross weight by formula.

U—6-wheelers manufactured after January 1, 1936.

V—Solid tires prohibited.

V1—Solid tires prohibited except on property carrying vehicles operating at 10 miles per hour or less.

V2—Solid tires limited to 20 miles per hour under 10,000 lbs., and to 12 miles per hour over 10,000 lbs.

W—See Note at left.

W1—Maximum gross when all axles carry maximum load—See "Note."

X—States where gross weight is determined by formula (See formula computations on next page).

Ark.—650-700 (L plus 40) two or more consecutive axles and any unit or combination.

Cal.—1750 (L plus 8) only applies to combinations.

Colo.—700 (L plus 40) semi-trailers.

Ind.—700 (L plus 40) two or more consecutive axles and any unit or combination.

Iowa.—450 (L plus 53-1/2) any unit or combination.

Kans.—700 (L plus 40) only applies to combinations.

Mont.—650 (L plus 40) for axle spacing to 20 ft. and 700 (L plus 40) above 20 ft.

N. M.—600 (L plus 40) two or more consecutive axles and any unit or combination.

N. Y.—750 (L plus 40) three or more consecutive axles and any unit or combination.

Ore.—700 (L plus 40) any unit or combination.

S. C.—700 (L plus 40) any unit or combination.

Texas.—700 (L plus 40) any unit or combination.

Utah.—700 (L plus 40) any unit or combination.

Wash.—750 (L plus 40) any unit or combination.

W. Va.—1330-1000-670 (L plus 40) applies to highways dependent on type of bridges thereon.

Wyo.—600 (L plus 40) two or more consecutive axles and any unit or combination.

Z—See detailed comment by States on next page.

NATIONAL HIGHWAY USERS CONFERENCE, National Press Bldg., Washington, D. C.
Corrected to March 10, 1941, Copyright 1941

GROSS WEIGHTS COMPUTED BY FORMULAS

Computation of Gross Weights according to formulas, based on distance (in feet) between first and last axles, for States identified in State Size & Weight Limits chart by Footnote "X." It should be remembered that the figures in each column represent only a mathematical extension and are governed by Legal Overall Length Limits for single units and combinations of particular states. Also, that formula computations are superseded in some instances by specific limits given in the chart.

"L" (See Note Below) in Feet	Iowa 450 (L + 53 1/2)	New Mexico Wyoming 600 (L + 40)	Arkansas ¹ Montana ² 650 (L + 40)	West Virginia (H-10 Bridges) 670 (L + 40)	Arkansas ² Indiana, Texas Colorado, Kansas Montana ⁴ Ore-on S. Carolina Utah 700 (L + 40)	New York Washington 750 (L + 43)	West Virginia (H-15 Bridges) 1000 (L + 40)	West Virginia (H-20 Bridges) 1330 (L + 40)	California 1750 (L + 8)	"L" (See Note Below) in Feet
10	28500	30000	32500	33500	35000	37500	50000	66500	31500	10
11	28950	30600	33150	34170	35700	38250	51000	67830	33250	11
12	29400	31200	33800	34840	36400	39000	52000	69160	35000	12
13	29850	31800	34450	35510	37100	39750	53000	70490	36750	13
14	30300	32400	35100	36180	37800	40500	54000	71820	38500	14
15	30750	33000	35750	36850	38500	41250	55000	73150	40250	15
16	31200	33600	36400	37520	39200	42000	56000	74480	42000	16
17	31650	34200	37050	38190	39900	42750	57000	75810	43750	17
18	32100	34800	37700	38860	40600	43500	58000	77140	45500	18
19	32550	35400	38350	39530	41300	44250	59000	78470	47250	19
20	33000	36000	39000	40200	42000	45000	60000	79800	49000	20
21	33450	36600	39650	40870	42700	45750	61000	81130	50750	21
22	33900	37200	40300	41540	43400	46500	62000	82460	52500	22
23	34350	37800	40950	42210	44100	47250	63000	83790	54250	23
24	34800	38400	41600	42880	44800	48000	64000	85120	56000	24
25	35250	39000	42250	43550	45500	48750	65000	86450	57750	25
26	35700	39600	42900	44220	46200	49500	66000	87780	59500	26
27	36150	40200	43550	44890	46900	50250	67000	89110	61250	27
28	36600	40800	44200	45560	47600	51000	68000	90440	63000	28
29	37050	41400	44850	46230	48300	51750	69000	91770	64750	29
30	37500	42000	45500	46900	49000	52500	70000	93100	66500	30
31	37950	42600	46150	47570	49700	53250	71000	94430	68000	31
32	38400	43200	46800	48240	50400	54000	72000	95760	69500	32
33	38850	43800	47450	48910	51100	54750	73000	97090	71000	33
34	39300	44400	48100	49580	51800	55500	74000	98420	72500	34
35	39750	45000	48750	50250	52500	56250	75000	99750	74000	35
36	40200	45600	49400	50920	53200	57000	76000	101080	75500	36
37	40650	46200	50050	51590	53900	57750	77000	102410	77000	37
38	41100	46800	50700	52260	54600	58500	78000	103740	78500	38
39	41550	47400	51350	52930	55300	59250	79000	105070	80000	39
40	42000	48000	52000	53600	56000	60000	80000	106400	81500	40
41	42450	48600	52650	54270	56700	60750	81000	107730	83000	41
42	42900	49200	53300	54940	57400	61500	82000	109060	84500	42
43	43350	49800	53950	55610	58100	62250	83000	110390	86000	43
44	43800	50400	54600	56280	58800	63000	84000	111720	87500	44
45	44250	51000	55250	56950	59500	63750	85000	113050	89000	45
46	.....	.....	55900	.....	60200	64500	.....	.....	.....	46
47	.....	.....	56550	.....	60900	65250	.....	.....	.....	47
48	.....	.....	57200	.....	61600	66000	.....	.....	.....	48
49	.....	.....	57850	.....	62300	66750	.....	.....	.....	49
50	.....	.....	58500	.....	63000	67500	.....	.....	.....	50
51	.....	.....	59150	.....	63700	68250	.....	.....	.....	51
52	.....	.....	59800	.....	64400	69000	.....	.....	.....	52
53	.....	.....	60450	.....	65100	69750	.....	.....	.....	53
54	.....	.....	61100	.....	65800	70500	.....	.....	.....	54
55	.....	.....	61750	.....	66500	71250	.....	.....	.....	55
56	.....	.....	62400	.....	67200	72000	.....	.....	.....	56
57	.....	.....	63050	.....	67900	72750	.....	.....	.....	57

"L" = Distance between first and last axles of group of axles considered.

¹—Arkansas vehicles with axles spaced not more than 7 ft. apart.

²—Arkansas vehicles with axles spaced over 7 ft. apart.

³—Montana vehicles with axles spaced not more than 20 ft. apart.

⁴—Montana vehicles with axles spaced over 20 ft. apart.

RESTRICTIONS PECULIAR TO CERTAIN STATES

ARK...... Maximum gross weights subject to maximum capacity based on tire sizes. Tolerance of 7 1/2 per cent is allowed above allowances listed per tire sizes shown in Table (NHUC Size & Weight Book), but maximum axle weight is limited to 16,000 lbs. Vehicle weight allowances shown in State Size & Weight Limits chart are calculated on the basis of 8,000 lbs. on the front axle and 16,000 lbs. on all others. Single unit buses allowed axle weight of 17,800 lbs. if equipped with dual mounted low pressure tires not less in size than 10.50 x 22 in.

CALIF...... 18,000 lbs. per axle permitted on vehicles, registered prior to 1930 (11,000 per wheel), until Dec. 31, 1942.

CONN...... Not more than 80 per cent of vehicle gross on any one axle.

DELA...... 2,000 lbs. additional allowed on three-axled trucks with pneumatic tires and two hubs and brakes on each hub.

D. C...... Solid tires, when permitted, allowed 10 per cent less than pneumatics.

FLA...... Private vehicles allowed 18,000 lbs. with power brakes and six tires.
For hire vehicles: (Solid tires forbidden.)
Trucks allowed 24,000 lbs. with power brakes and 12,000 lbs. unladen.
Tractor-semi-trailer allowed 34,000 lbs. if both vehicles have power brakes.
Four-wheeled trailer allowed 20,000 lbs. with power brakes and over-sized tires.
No unit may carry a payload over 12,000 lbs.

MD...... 20,000 lbs. axle weight allowed on four-wheeled vehicles drawing semi-trailer equipped with pneumatic tires; and 42,000 lbs. allowed on three-axled vehicle with pneumatic tires and two hubs, each with power brakes, on each rear axle.

MINN...... When axles spaced under 8 ft. apart restricted to 12,000 lbs. on pneumatics and 7,200 lbs. on solid tires.

MO...... Sizes and weights allowed in cities of 75,000 population or over, are not shown in chart.

MONT...... The allowances shown in State Size & Weight Limit chart are calculated on the assumption that all axles are spaced 40 in. apart or over.

N. D...... Only one semi-trailer permitted when used commercially.

ORE...... The greatest allowances shown in State Size & Weight Limit chart are permitted on paved state highways, medium allowances are the maxima permitted on paved highways which are not on the state highways, and the lowest allowances are the maxima permitted on unpaved highways. Special permit will allow maximum height of 12 ft. 6 in.

PA...... Six-wheelers must have minimum axle spacing of 36 in. between the two rear axles. Buses operating within municipalities exempted from 16,000 lbs. axle and 26,000 lbs. gross limits.

UTAH..... Gross weight also limited to three times unladen weight.

VT...... No restriction on axle weights unless vehicle

gross exceeds 20,000 lbs. when they are limited to 16,000 lbs. The greatest allowances shown in State Size & Weight Limit chart are permitted on state highways, medium allowances are the maxima permitted on state-aid highways, and the lowest allowances are the maxima permitted on other highways.

VA...... Two-axled vehicles with six-wheels permitted 32,000 lbs. gross.

WASH...... 18,000 lbs. allowed per axle on two-axled truck or tractor, and on one-axled semi-trailer.

14,000 lbs. allowed per axle on three-axled truck or tractor, and on two-axled semi-trailer.

12,000 lbs. allowed per axle on full trailers. Minimum axle spacings for vehicles and combinations over 12,000 lbs. gross are specified.

W. VA...... No unit may carry a load more than 100 per cent greater than its registered capacity if registered for not over two tons; or more than 50 per cent greater if registered for over two but not over four tons; or more than 25 per cent greater if registered for over four tons.

WISC...... Four-wheeled vehicles with two driving axles spaced 8 ft. or more apart permitted gross weight of 28,000 lbs.; if gross weight exceeds 24,000 lbs., the axle weight must not exceed 16,000 lbs. if equipped with high pressure pneumatic tires or 18,000 lbs. if equipped with balloon or low pressure tires.

SAFETY EQUIPMENT REGULATIONS (CONTINUED)

KEY TO SYMBOLS—(State Commission Rulings Are Given in Italics)

- GENERAL**
For explanation of Alphabetical abbreviations, see page 27.
- CLEARANCE LIGHTS**
(1)—Except road roller, road machinery or farm tractor.
(2)—Except passenger common carrier.
(3)—Except buses operated wholly in municipalities with illuminated interiors.
(4)—Except small two-wheeled trailers of 1,000 pounds or less capacity towed closely behind motor vehicle (and semi-trailers towed alone in New Hampshire and West Virginia), whose length including towing vehicle is not over 30 ft.

- (5)—May use in lieu of rear lights.
(6)—Grouped as identification lights 12" apart.
(7)—Green to right, red to left.
(8)—Set by Commissioner.
(9)—Or whose load or any part extends 40 in. or more to the left of the center of the chassis.
(10)—Except private passenger motor vehicles.

REFLECTORS

- *—May use in lieu of clearance lights.

REFLECTORS

CLEARANCE LIGHTS

REFLECTORS													CLEARANCE LIGHTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
STATE	REQUIRED ON	In Excess of		No. Required		Color		Location			Viability (Ft.)		Need Approval	STATE	REQUIRED ON	In Excess of		No. Required		Color		Location			Viability (Ft.)		Need Approval																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Width (In.)	Length (Ft.)	Front	Rear	Front	Rear	Side	Side	Side	Side	Front				Rear	Side	Side	Side	Side	Side	Side	Side	Side	Side	Side		Side	Side	Side																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
I.C.C.	T, B, Trl, SemiT T, B, Trl, SemiT SemiT over 3000 lbs.	80											No	I.C.C.	B, T, Trl, SemiT T, B, Trl, SemiT SemiT over 3000 lbs. gross	80		2	2							600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500	600	500

ICC SAFETY EQUIPMENT

REGULATIONS AFFECTING ALL FOR-HIRE AND PRIVATE MOTOR TRUCKS

PART 3 PARTS AND ACCESSORIES NECESSARY FOR SAFE OPERATION

INDEX TO PART 3

- 3.1 Compliance required. Below.
- 3.2 Additional parts and accessories allowable. Below.
- 3.3 Equipment required on all motor vehicles (except in drive-away operations). Below.
- 3.31 Lighting devices and reflectors on all vehicles. Below.
- 3.32 Brakes on all vehicles. Page 90.
- 3.33 Safety glass on all vehicles. Page 91.
- 3.34 Miscellaneous parts and accessories on all vehicles. Page 91.
- 3.4 Additional equipment required on new vehicles. Page 94.
- 3.41 Lighting devices on new vehicles. Page 94.
- 3.42 Brakes on new vehicles. Page 94.
- 3.43 Safety glass on new vehicles. Page 96.
- 3.44 Miscellaneous parts and accessories on new vehicles. Page 96.

3.1 COMPLIANCE REQUIRED.—Every motor carrier shall comply with the following regulations.

3.2 ADDITIONAL PARTS AND ACCESSORIES ALLOWABLE.—Nothing contained in these regulations shall be construed to prohibit the use of additional parts and accessories, not inconsistent with these regulations, tending to increase the safety of operation of motor vehicles, and to prevent accidents.

PARTS AND ACCESSORIES REQUIRED ON ALL MOTOR VEHICLES⁴

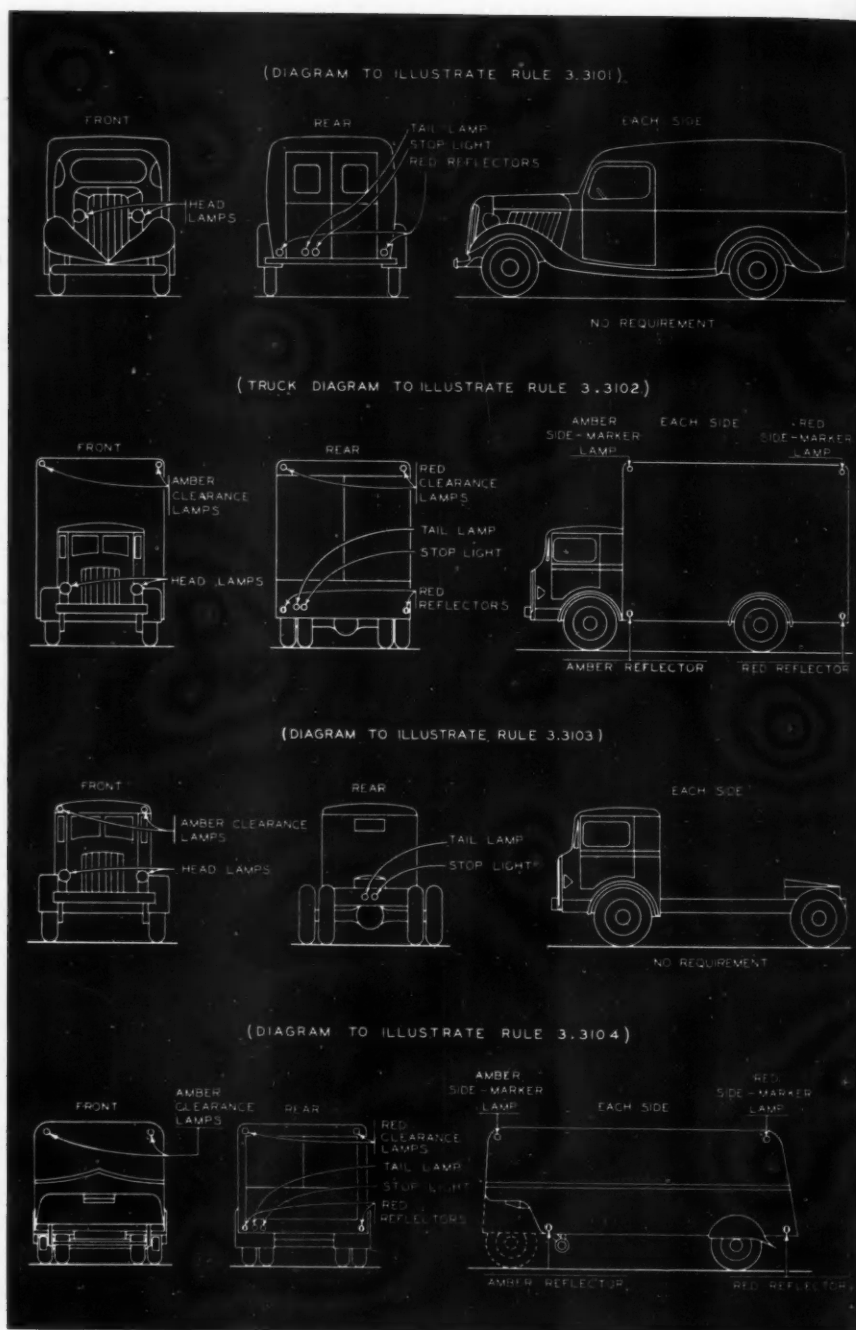
[Except in drive-away operations]

3.3 EQUIPMENT REQUIRED ON ALL MOTOR VEHICLES (Except in Drive-away Operations).—Every motor vehicle except motor vehicles engaged in drive-away operation (see under Rule 3.5) shall be equipped as follows:

3.31 LIGHTING DEVICES AND REFLECTORS ON ALL VEHICLES.

3.3101 Every bus or truck.—On every bus or truck, whatever its size, there shall be at least the following lighting devices and reflectors:

⁴ See under Rule 3.4 for additional requirements for new vehicles.



(a) On the front, two head lamps, one at each side.

(b) On the rear, one red tail lamp; one red or amber stop light; two red reflectors, one at each side.

3.3102 Every bus or truck 80 inches or more in width.—On every bus or truck 80 inches or more in over-all width there shall

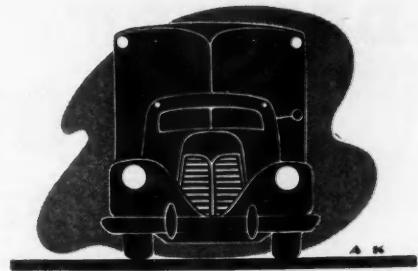
be at least the following lighting devices and reflectors:

(a) On the front, two head lamps, one at each side; two amber clearance lamps, one at each side.

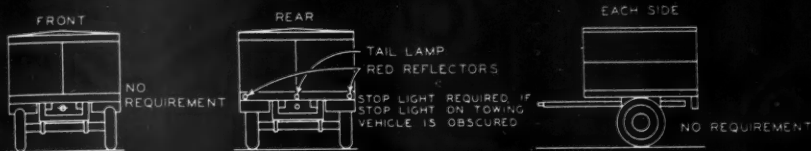
(b) On the rear, one red tail lamp; one red or amber stop light; two red clearance lamps, one at each side; two red reflectors, one at each side.

REQUIREMENTS

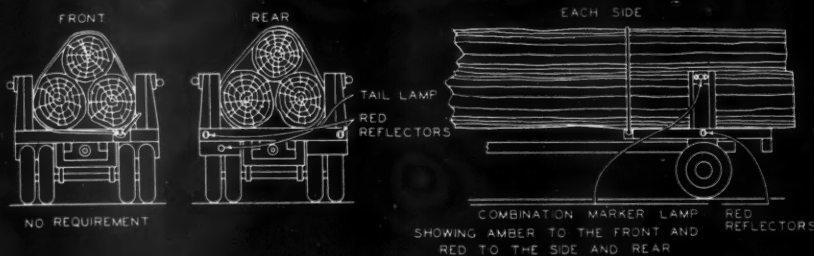
OPERATING IN INTERSTATE OR FOREIGN COMMERCE



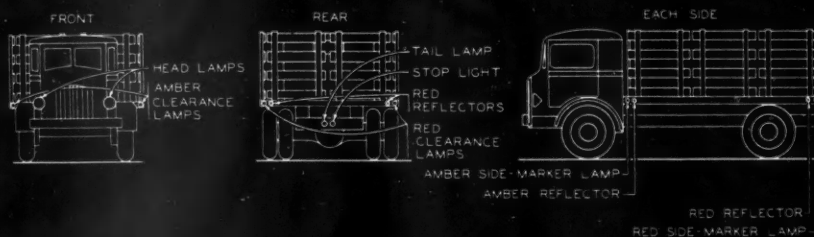
(DIAGRAM TO ILLUSTRATE RULE 3.3105)



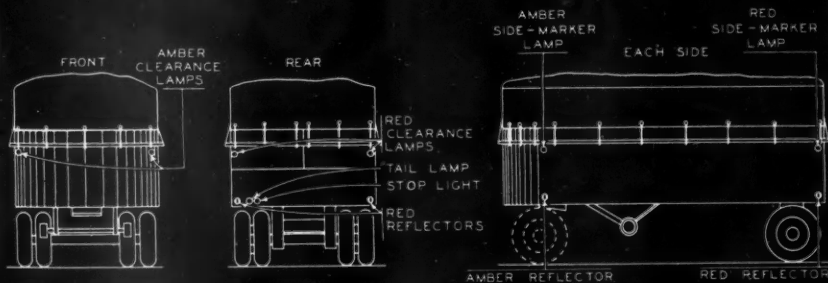
(DIAGRAM TO ILLUSTRATE RULE 3.3106)



(DIAGRAM OF "STAKE-SIDE BODY" TO ILLUSTRATE MOUNTING OF CLEARANCE LAMPS ON VEHICLES WITHOUT PERMANENT TOP OR SIDES)



(DIAGRAM OF "TARPAULIN TOP" TO ILLUSTRATE MOUNTING OF CLEARANCE LAMPS ON VEHICLES WITHOUT PERMANENT TOP OR SIDES)



(c) On each side, one amber side-marker lamp, located at or near the front; one red side-marker lamp, located at or near the rear; one amber reflector, located at or near the front; one red reflector, located at or near the rear.

3.3103 Every tractor.—On every tractor there shall be at least the following lighting devices and reflectors:

(a) On the front, two head lamps, one at each side; two amber clearance lamps, one at each side.

(b) On the rear, one red tail lamp; one red or amber stop light.

3.3104 Every semitrailer or full trailer in excess of 3,000 pounds gross weight.—On every semitrailer or full trailer having a gross weight in excess of 3,000 pounds

Note: Diagrams at left show clearance and side-marker lamps, and tail lights and reflectors, as mounted separately. Clearance and side-marker lamps may be combined (Rule 3.3109), and reflectors may be incorporated in tail lamps (Rule 3.3115).

there shall be at least the following lighting devices and reflectors:

(a) On the front, two amber clearance lamps, one at each side.

(b) On the rear, one red tail lamp; one red or amber stop light; two red clearance lamps, one at each side; two red reflectors, one at each side.

(c) On each side, one amber side-marker lamp, located at or near the front; one red side-marker lamp, located at or near the rear; one amber reflector, located at or near the front; one red reflector, located at or near the rear.

3.3105 Every semitrailer or full trailer weighing 3,000 pounds gross or less.—On every semitrailer or full trailer having a gross weight of 3,000 pounds or less, there shall be at least the following lighting devices and reflectors:

(a) On the front, no requirement.

(b) On the rear, one red tail lamp; two red reflectors, one at each side; one red or amber stop light if the semitrailer or full trailer obscures the stop light on the towing vehicle.

3.3106 Every pole trailer.—On every pole trailer there shall be at least the following lighting devices and reflectors:

(a) On the front, no requirement.

(b) On the rear, one red tail lamp; two red reflectors, one at each side, placed to indicate extreme width of the pole trailer or its load, whichever is wider.

(See Rule 2.34 requiring red lantern or flag on end of projecting load.)

(c) On each side, on the rearmost support for the load, one combination marker lamp showing amber to the front and red to the side and rear, mounted to indicate maximum width of the pole trailer or load; one red reflector, located at or near the rear.

3.3107 Electric lamps to be mounted permanently.—Where electric lamps are used to meet the requirements of Rule 3.31, they shall be securely and permanently affixed to the permanent structure of the motor vehicle, except for the combination marker lamps on pole trailers prescribed in Rule 3.3106 (c).

3.3108 Clearance lamps to indicate extreme width.—Required clearance lamps shall be mounted in such a manner as to indicate the extreme width of the motor vehicle.

(TURN TO PAGE 88, PLEASE)

DRIVERS' HOURS OF SERVICE

REGULATIONS AS OF JANUARY 1, 1941

State	Vehicles Affected	LIMIT OF HOURS ON DUTY			
		When Consecutive	Min. Hrs. Off Duty	When Not Consecutive (Hours (Period allowed) in hrs.)	Min. Hrs. Off Duty
Ala.	Common & Contract Carriers	8	8	8 in 12	8
Ariz.	Motor & Private Property Carriers	10(a)	8	10 in 24	8
Ark.	Common and Contract Carriers	12	8	14(b) in 24	8
Calif.	Passenger Common Carriers	10	9	10 in 15	9
	Property Common Carriers			10 in 15	
	Other For-Hire Passenger Carriers*	10	8	10 in 15	8
	Other Property Transporters*	12	8	12 in 15	8
Colo.	Common Carriers*			10 in 24	8
Conn.	Commercial & Public Service	12	8	16(e) in 24	10
Dela.	Commercial (trucks and buses)	8*	2	16 in 24	
D. C.	For-Hire Buses Over Regular Routes	12		16 in 24	8
Fla.	For-Hire	Same	as I.	C. C. Regulations	Below
Ga.	For-Hire Carriers	10			
Idaho.	Transportation Companies (Common)*	Same	as I.	C. C. Regulations	Below
Ill.	Passenger Common Carriers	10	8	10 in 16	8
	Trucks			12* in 24	8
				15 in 24	
				14 in 24	
Ind.	Common & Contract	8(h)			
Iowa.	For-Hire*	12	10	12 in 24	8
Kans.	Common, Contract & Private Carriers	12		16 in 24	
	Same (sleeper cabs)	36			12(f)
Ky.	Common & Contract Carriers	12	8	16(e) in 24	10
La.	Property For-Hire	12		NO LIMITATIONS	
Me.				16(e) in 24	10
Mid.				NO LIMITATIONS	
Mass.	Motor Buses			10 in 16	
	Property Transporters	12	8	16(e) in 24	10
Mich.	Common & Contract Carriers*	12	10	12 in 24	8
	Trucks	12(h)		12 in 14	10
Minn.	For-Hire Carriers	Same	as I.	C. C. Regulations	Below
Miss.	Motor Carriers	Same	as I.	C. C. Regulations	Below
Mo.	All Carriers*	10	10	10 in 24	10
Mont.	Motor Carriers*			8 in 24	8
	Buses			8 in 24	12
	All Motor Vehicle Operators			8 in 24	
Neb.	Motor Carriers			12 in 24	
Nev.	For-Hire*	12		12 in 15	8
N. H.	For-Hire Trucks	12		16(e) in 24	10
	Buses			NO LIMITATIONS	
N. J.	Commercial Trucks & Buses	12(i)	8	12 in 16(i)	8
N. M.	For-Hire	10		16(e) in 24	
N. Y.	Trucks & Buses	10(k)	8	10 in 14	8
N. C.	Franchise Holders (Common Carriers)	7		14 in 24(d)	
N. D.	Common & Contract Carriers	10	10	10 in 24	10
Ohio.	Bus Drivers			14 in 24(c)	
	Truck Drivers	14	8	14 in 24	8
Okla.	Motor Carriers* (including private)			10 in 24	8
Ore.	All Motor Carriers*	12	10	12 in 24	Below
Penn.	Motor Carriers	Same	as I.	C. C. Regulations	Below
R. I.	Merchandise or Public Service	12	8	16(e) in 24	10
S. C.	Motor Carriers (g)			10 in 24*	8
	Truck Operators	8*		10 in 24	
S. D.	Motor Carriers	12	12	12(e) in 24	8
Tenn.	Motor Carriers			12 in 24	8
				(63 driving hrs. 7-day period.)	in any
Tex.	Motor Carrier Trucks	14	8	14 in 24	8
Utah.	All Motor Carriers	8		10(i) in 24	
Vt.				NO LIMITATIONS	
Va.	Common Carriers*			8 in 24	10
	Motor Vehicles*			13 in 24	
Wash.	Motor Freight Carriers	10	8	10 in 24	8
	Passenger Common Carriers			10 in 24	
W. Va.				NO LIMITATIONS	
Wis.	Motor Carriers	Same	as I.	C. C. Regulations	Below
Wyo.	Motor Carriers	10		14 in 24	10
Federal (ICC)	Interstate Common & Contract Carriers			10(m) in 24	8
				(60 hrs. in any week of 168 consecutive hours or 70 hours in any 192 consecutive hours.)	

- *—Limit is actual driving hours.
 (a)—Or drive a passenger carrier vehicle over 275 miles.
 (b)—If 2 hours' rest period provided.
 (c)—Or drive a passenger coach more than 300 miles in continuous service or 1500 miles in any week.
 (d)—Nine hours at end of two 7-hour periods with one hour rest intervening.
 (e)—No period off duty shall be deemed to break the continuity of service unless it be for at least 3 hours.
 (f)—Or one-third of the time on duty.
 (g)—Bus operators, 55 hours in any 7 consecutive days.
 (h)—No period off duty shall be deemed to break the continuity of service unless it be for not less than 2 hours at a place where food and lodging may be secured.
 (i)—Time taken for meals not counted in time on duty.
 (j)—May be spread over 15 hours provided time between runs is sufficient to permit rest and relaxation.
 (k)—Includes time for meals.
 (l)—Seventy-two hours in 7-day period or 96 hours in such period if a sleeper cab.
 (m)—Twelve hours in aggregate permitted in adverse weather and traffic conditions, provided the Bureau of Motor Carriers is notified.
 (min)—Minimum

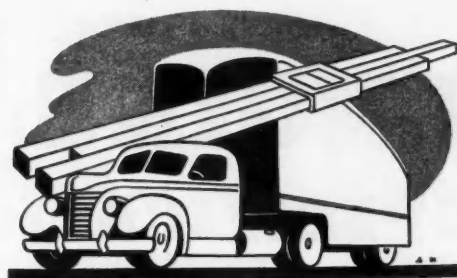
CLUTCH SPECIFICATIONS

CLUTCH MAKE AND MODEL	Rated Torque Capacity (Lb. Ft.)	Type	FACINGS				PRESSURES (Lb.)			Means of Adjustment	Bell Housing (S. A. E. No.)	Weight, Complete (Lb.)	
			Outside Diameter (Inches)	Inside Diameter (Inches)	Number of Facings	Total Area (One Facing)	Total Spring Pressure	Total on Friction Face	Per Sq. In. of Friction Surface				Overall Outside Diameter (In.)
BORG & BECK													
10A7	150	SP	10	6	2	50.0	1410	1410	28.2	12%	None	6+	18 1/4
11A8	180	SP	11	6 1/2	2	65.5	1770	1770	26.3	13%	None	4+	26
12Q	220	SP	11 1/2	7 1/4	2	69.5	340	1800	26.0	12%	CPP	4+	34 1/4
13Q	260	SP	12 1/2	7 3/4	2	89.0	425	2250	25.3	13%	CPP	3+	41
14Q	375	SP	13 1/2	7 3/4	2	110.0	400	2420	22.0	14%	CPP	3+	55 1/4
BROWN-LIPE													
13-S.P.		SP	12 1/2	7 1/4	2	86.0	320	2240	26.0	14%	TR		45
13-Two-plate		SP	13	7 3/4	4	90.0	500	2750	30.6	15%	TR		84
14-S.P.		SP	13 1/2	7 3/4	2	106.0	420	2940	27.8	15%	TR		58
14-Two-plate		SP	13 1/2	7 3/4	4	105.7	500	2750	28.0	16%	TR		96
CHEVROLET													
1941-1 1/2 Ton.	200	SP	9 1/2	6 1/2	2	35.9	(a)	(a)	(c)	11 1/2	RC	Spec	16.1
1941-1 1/2-1 3/4 T	200	SP	10 1/2	7	2	52.3	(b)	(b)	(d)	13 1/2	RC	Spec	21.7
LIPE, W. C.													
Z34-S	214	SP	11 1/2	7 1/4	2	89.5	380	1794	25.8	13%	Shim	3+	38
Z30-S	270	SP	12 1/2	7 1/4	2	89.0	360	2132	24.0	14%	Shim	3+	47 1/4
Z32-S	340	SP	13 1/2	7 1/4	2	110.0	415	2556	23.2	15%	Shim	3+	57 1/2
Z31-S	422	SP	13 1/2	7 1/4	2	110.0	480	3212	28.9	15%	Shim	3+	80
Z42-S	431	SP	15	8	2	128.0	480	3020	23.4	16%	Shim	2+	73
Z40-S	556	SP	15	8	2	128.0	575	3870	30.2	16%	Shim	2+	74
Z37-S	568	DP	12 1/2	7 3/4	4	89.0	480	2256	25.4	15%	Shim	2+	90 1/2
Z54-S	700	DP	13 1/2	7 1/4	4	104.0	480	2635	24.6	16%	Shim	2+	100
Z40-SX	708	SP	15	8	2	128.0	630	4925	38.4	16%	Shim	2+	74
Z38-S	1100	DP	14 1/2	8	4	115.0	575	3865	33.6	16%	Shim	2+	105
LONG													
8 1/2 CB	75	SP	8 1/2	6	2	28.5	Var	Var	Var	9 1/2	None	6+	10 1/2
9CF	135	SP	9	6 1/2	2	37.5	Var	Var	Var	11	None	5+	14 1/2
9 1/2 CF	150	SP	9 1/2	6	2	42.6	Var	Var	Var	11 1/2	None	5+	15 1/2
10CF	165	SP	10	6	2	50.2	Var	Var	Var	12	None	5+	20 1/2
11CF	195	SP	11	6 1/2	2	61.8	Var	Var	Var	13	None	4+	23 1/2
29A	225	DP	9 1/2	6 1/4	4	44.0	Var	Var	Var	11 1/2	None	4+	33
12CB	250	SP	12	7	2	74.6	Var	Var	Var	14 1/2	None	3+	37 1/2
31A	300	DP	11	6 1/2	4	61.7	Var	Var	Var	13	None	4+	44
13-B	350	SP	13 1/2	7 1/4	2	107.0	Var	Var	Var	15 1/2	NC	2+	62
14B	325	SP	13 1/2	7 1/4	2	107.0	Var	Var	Var	16 1/2	NC	2+	58
15-4	500	SP	15 1/2	8	2	125.0	Var	Var	Var	17 1/2	NC	1+	84
34BD	550	DP	13 1/2	7 1/4	4	107.0	Var	Var	Var	16 1/2	NC	2+	100
17	600	SP	16 1/2	10	2	141.8	Var	Var	Var	19 1/2	NC	1+	96
ROCKFORD													
6TS	35	SP	6	4	2	15.0	330	330	21.0	7%	None		3 1/2
8-II	110	SP	7 1/2	5 1/2	2	26.0	720	720	27.6	9 1/2	None	4, 5	11
9-RM	115	SP	8 1/2	5 1/2	2	36.0	750	750	20.8	11 1/2	None	2, 3, 4, 5	13
8 1/2-RM	120	SP	8 1/2	5 1/2	2	30.0	822	822	27.0	10 1/2	None		9 1/2
9-II	192	SP	9 1/2	5 1/2	2	36.0	930	930	25.9	10 1/2	None	2, 3, 4, 5	14
10-RM	175	SP	9 1/2	6 1/2	2	42.0	1020	1020	24.3	11 1/2	None	2, 3, 4, 5	15 1/2
9-TT	210	SP	9	5 1/2	2	37.5	1350	1350	36.0	11 1/2	None	2, 3, 4, 5	17
10-TT	250	SP	9 1/2	6 1/2	2	47.0	1500	1500	32.0	12 1/2	None	2, 3, 4, 5	20 1/2
11-RM	310	SP	10 1/2	6 1/2	2	55.0	1665	1665	30.0	12 1/2	None	2, 3, 4	22
11-TT	320	SP	10 1/2	6 1/2	2	55.5	1740	1740	31.8	13	None	2, 3, 4	27
12-II	347	SP	11 1/2	6 1/2	2	73.5	1665	1665	22.5	13 1/2	None	2, 3, 4	29 1/2
12-TT	425	SP	11 1/2	6 1/2	2	73.0	2175	2175	29.3	14 1/2	None	2, 3, 4	42 1/2
14-II	590	SP	13 1/2	8	2	101.0	2460	2460	24.3	15 1/2	None	1, 2, 3	50
14-TT	600	SP	13 1/2	8	2	101.0	2625	2625	26.0	15 1/2	None	1, 2, 3	48
15-O	600	SP	15	8	2	126.5	2880	2880	22.8	17 1/2	None	1, 2, 3	83
15-TT	920	SP	15	8	2	126.5	3150	3150	25.0	16 1/2	None	1, 2, 3	86 1/2
18-TT	1960	DP	17 1/2	9 1/2	4	171.0	3360	3360	19.6	20 1/2	None	0, 00	422

CLUTCH ABBREVIATIONS

- +—And larger
 1—Spicer Mfg. Co.
 (a)—1100-1225 lbs.
 (b)—1200-1250 lbs.
 (c)—15.3 to 17.1 lbs.
 (d)—11.5 to 11.9 lbs.
 CPP—Cam on Pressure Plate
 DP—Double Plate, Dry
 NC—Nuts on Cover Plate
 RC—Linkage between Release and Clutch Pedal
 SP—Single Plate, Dry
 Spec—Special
 TR—Threaded ring
 Var—Varies

TRANSPORTATION ENGINEERING DATA



FORMULAS

VEHICLE SPEED

$$\text{MPH} = \frac{\text{RPM} \times R}{168 \times \text{FGR}}$$

MPH = Miles Per Hour
RPM = Engine Revolutions per Minute
R = Rolling Radius
FGR = Final Gear Ratio
168 = A constant comprising the conversion of rolling radius in inches to wheel circumference in feet; wheel revolutions per minute to wheel revolutions per hour; feet per hour to miles per hour

ENGINE SPEED

$$\text{RPM} = \frac{\text{MPH} \times 168 \times \text{FGR}}{R}$$

See above for abbreviations

GRADE ABILITY

$$\text{GA} = \frac{\text{TE}}{\text{GVW}} \text{ minus } .012$$

GA = Grade Ability
TE = Tractive Effort
GVW = Gross Vehicle Weight
.012 = 12 lb. per 1000 lb., rolling resistance on hard-surfaced roads

TRACTIVE EFFORT

$$\text{TE} = \frac{\text{lb. in. Torque} \times \text{FGR} \times .90}{R}$$

R = Rolling Radius in Inches
FGR = Final Gear Ratio
lb. in. Torque = 12 times Torque in lb. ft.
.90 = Efficiency for all rear axles except worm, then .85

DRAWBAR PULL

$$\text{DP} = \frac{.90 \times \text{lb. in. Torque} \times \text{FGR}}{R} \text{ — } .012 \text{ GVW}$$

DP = Drawbar Pull
R = Rolling Radius in Inches
FGR = Final Gear Ratio
GVW = Gross Vehicle Weight
.90 = Efficiency for all rear axles except worm, then .85
lb. in. Torque = 12 times Torque in lb. ft.
.012 = 12 lb. per 1000 lb. Rolling Resistance

MAXIMUM NET ENGINE TORQUE

Torque in lb. ft. = $.70 \times \text{cu. in. Piston Displacement}$. (This is approximate and should be used only when actual torque is not known.)
.70 = Average figure based on analysis of a number of torque curves

TORQUE AT PEAK HORSEPOWER

$$\text{Torque at Peak HP} = \frac{\text{HP} \times 5252}{\text{RPM}}$$

5252 = Constant resulting from the conversion of torque and RPM into horsepower
HP = Maximum net horsepower (See Horsepower below)
Peak HP = Maximum useful horsepower

MAXIMUM NET TORQUE

$$\text{Max. Net Torque} = \frac{\text{Torque at Peak HP} \times 5}{4}$$

(This is approximate and should be used only when actual net torque is not known.)

5 and 4 = Figures based on an analysis of a number of torque curves

PISTON DISPLACEMENT

$$\text{Piston Displacement in cu. in.} = B \times B \times .7854 \times S \times \text{No. of Cylinders}$$

B = Bore
S = Stroke
.7854 = Constant comprising the conversion of the area of a square to the area of a circle of the same dimensions

FINAL GEAR RATIO

$$\text{FGR} = \frac{R \times \text{GVW} \times (\text{GA} + .012)}{\text{lb. in. Torque} \times .90}$$

GA = Grade Ability
GVW = Gross Vehicle Weight
lb. in. Torque = 12 \times lb. ft. Torque
R = Rolling Radius in Inches
.90 = Efficiency for all rear axles except worm, then .85
.012 = Rolling resistance on hard-surfaced roads

AMA HORSEPOWER

(For License Purposes Only)

$$\text{AMA HP} = \frac{B \times B \times \text{No. of Cyl.}}{2.5}$$

B = Cylinder Bore
2.5 = Constant based on average engine in 1906

HORSEPOWER

Maximum Net Horsepower (maximum gross horsepower less power consumed by engine accessories) is the only horsepower that should be used in transportation engineering formulas, and can be determined only by using a dynamometer

TIRE CAPACITIES

Tire and Rim Association Sizes, Loads and Pressures

Tire Size	No. of Piles	Lb. Pressure for Max. Load	Maximum Load Capacity (Lb.)
6.00-17	6	50	1250
6.20-20	6	50	1400
6.50-17	6	50	1500
6.50-18	6	50	1575
6.50-20	6	50	1700
7.00-17	8	55	1725
7.00-18	8	55	1800
7.00-20	8	55	1950
7.50-15	8	55	1825
7.50-17	8	55	2000
7.50-18	8	55	2100
7.50-20	8	55	2250
7.50-24	8	55	2250
8.25-15	10	60	2275
8.25-18	10	60	2550
8.25-20	10	60	2750
8.25-22	10	60	2950
8.25-24	10	60	3125
9.00-15	10	65	2875
9.00-18	10	65	3225
9.00-20	10	65	3450
9.00-22	10	65	3675
9.00-24	10	65	3925
10.00-15	12	70	3375
10.00-18	12	70	3775
10.00-20	12	70	4000
10.00-22	12	70	4275
10.00-24	12	70	4550
11.00-18	12	70	4200
11.00-20	12	70	4500
11.00-22	12	70	4750
11.00-24	12	70	5000
12.00-18	14	80	5125
12.00-20	14	80	5475
12.00-22	14	80	5800
12.00-24	14	80	6150
13.00-20	16	85	6750
13.00-24	16	85	7575
14.00-20	16	90	8200
14.00-24	16	90	9150

EXTRA PLY AND DUAL-MARKED TIRES

Tire Size	No. of Piles	Lb. Pressure for Max. Load	Maximum Load Capacity (Lb.)
6.00-16/30x5	8	70	1700
6.00-24/34x5	8	70	1950
6.50-20/32x6	8	65	1950
7.00-20/32x6	10	70	2250
7.00-24/38x6	10	70	2575
7.50-15	10	75	2225
7.50-18/32x7	10	75	2500
7.50-20/34x7	10	75	2700
7.50-24/38x7	10	75	3100
8.25-15	12	75	2600
8.25-18	12	75	2925
8.25-20	12	75	3150
8.25-24	12	75	3600
9.00-15	12	80	3200
9.00-18	12	80	3600
9.00-20/36x8	12	80	3850
9.00-20/40x8	12	80	4375

ENGINE SERVICE

SPECIFICATIONS INCLUDING TUNE-UP DATA..

The information listed in these columns provides the mechanic or inspector with factory recommendations for adjustments which are a part of routine inspection as well as the heavier rebuilding operations. So far as Commercial Car Journal knows this is the only table that contains such information on the various truck engine models in such convenient form.

GUIDE TO SYMBOLS

Al—Aluminum
As—Strut Type Aluminum
Aa—Anodized Aluminum
CA—Cast Alloy
CI—Cast Iron
St—Alloy Steel
TP—Tin Plated Cast Iron
C—Cold
Bot—Bottom
Top—Top
AC—AC
AL—Auto-Lite
Ch—Champion

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG			Breaker Point Gap	Spark Occurs "C" B-Before A-After	Spark Occurs Fly- Wheel Teeth "C" B-Before A-After	Comp. Pressure at Cranking Speed	
						°C	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size					Gap
AUTOCAR																		
RH, DF, RHT, DT, DFT, RHD, DP, 6D, DH, UD, UDF, UDT, UDP, 6RH, 6DF, 6UD, UDTF	Own 358	6-4x4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	2 COM	3/8	P	D	8 1/2" B	1 1/2" B	95
N, NT, 6N, UN, UNT, 6UN, 4X4DF, 4X4N	Own 404	6-4 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	2 COM	3/8	P	Z	2" B	1 1/2" B	95
NF, NFT, 6NF, UNF, UNFT, 6UNF, S, US, N6OC, 4X4NF	Own 453	6-4 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	2 COM	3/8	P	Z	2" B	1 1/2" B	95
TF, TFT, 6TF	Wau 6RB	6-5x5 1/2	Ala	Top	40-1750	10" A	3 3/4" A	.020	.006	.010	Ch	2 COM	3/8	P	Z	9" B	3 3/8" B	90
RM, RL, RMT (1937)	Own 315	6-3 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	8 1/2" B	1 1/2" B	96
DP, D, ITR, 6X2RL, RLD, UD, IUTR, UPD, 6X2UD (1937)	Own 358	6-4x4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	O	3/8	P	Z	2" B	1 1/2" B	95
DF, 2TR, 6X2DF, DH, UDF, 2UTR, 6XEUN, 4X4DF, 4X4N, 6X4DF (1937)	Own 404	6-4 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	O	3/8	P	Z	2" B	1 1/2" B	95
6X2UNF, 3UTR, 4UTR, 3TR, 4TR, 6X2NF, C, 4X4NF (1937)	Own 453	6-4 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	O	3/8	P	Z	2" B	1 1/2" B	95
6T, UT, UTT, 6UT, N75C, 4X4S (1936-37), C, T, TT, 6X3T, 6X2UT, 5TR, 5UTR, 6X4TO, 6X4UTO, 6X4UTD, 6X4TC, 6X4TD	Own 501	6-4 1/2 x 5 1/2	Ala	Top	40-2200	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	Z	2" B	1 1/2" B	95
A, UA, C10, C10T, U10, U10T	Her JXB	6-3 1/2 x 4 1/2	Ala	Top	35-2600	2" A		.010	.006	.006	Ch	O	3/8	P	Z	TC	TC	95
B, UB, C20, C20T, U20, U20T	Her JXC	6-3 1/2 x 4 1/2	Ala	Top	35-2600	2" A		.010	.003	.003	Ch	O	3/8	P	Z	TC	TC	95
RB, URB	Own 315	6-3 1/2 x 4 1/2	Ala	Top	40-2200	TC	TC	.018	.015	.018	Ch	8 COM	18mm	P	D	9" B	1 1/2" B	96
RL, RLS, ITR, RLD, DP, 6X2RL, URL, URLS, UD, IUTR, UDP, 6X2UD	Own 358	6-4x4 1/2	Ala	Top	40-2200	TC	TC	.018	.015	.018	Ch	2 COM	3/8	P		9" B	1 1/2" B	96
DF, N, 2TR, DH, 6X2DF, 6X4DF, UDF, UN, 2UTR, 6X2UN, 4X4DF	Own 408	6-4 1/2 x 5 1/2	Ala	Top	40-2200	TC	TC	.018	.015	.018	Ch	8 COM	18mm	P		2" B	1 1/2" B	95
NF, 3TR, 4TR, S, 6X2NF, UNF, 3UTR, 4UTR, US, 6X2UNF, 4X4N	Own 447	6-4 1/2 x 5 1/2	Ala	Top	40-2200	TC	TC	.018	.015	.018	Ch	8 COM	18mm	P		2" B	1 1/2" B	95
C30, C30T, U30, U30T	Own 315	6-3 1/2 x 4 1/2	Ala	Top	40-2600	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	6" B	1 1/2" B	96
C30, C30T, U30, U30T (1941)	Own 331	6-3 1/2 x 5	Ala	Top	40-2600	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	6" B	1 1/2" B	96
C40, C40T, C40D, C4062, C4064, U40, U40T, U40D, U4062, C50, C50D, U50, C60, U60, U60D	Own 358	6-4x4 1/2	Ala	Top	40-2600	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	6" B	1 1/2" B	96
C40, C40T, C40D, C4062, C4064, U40, U40T, U40D, U4062, C50T, C50D, U50, C60, U60, U60D (1941)	Own 377	6-4x5	Ala	Top	40-2600	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	2" B	1 1/2" B	95
C60T, C6044, C70, C70D, C7062, C7064, U60T, U70, U7062, U7064	Own 408	6-4 1/2 x 5 1/2	Ala	Top	40-2400	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	2" B	1 1/2" B	95
C7044, C70T, C80, C80T, C80D, C8062, U70T, U80, U80T, U80D, U8062	Own 447	6-4 1/2 x 5 1/2	Ala	Top	40-2400	TC	TC	.018	.015	.018	Ch	8 COM	18mm	P	D	2" B	1 1/2" B	95
C8064, C8044, C90, C90T, C90D, C9062, C9064, U90, U90T, U90D, U9064, U9062, U9064	Own 501	6-4 1/2 x 5 1/2	Ala	Top	40-2400	TC	TC	.020	.015	.018	Ch	8 COM	18mm	P	D	2" B	1 1/2" B	95
C9044	Her HXB	6-5x6	Ala	Top	40-2600	TC	TC		.015	.018	Ch	8 COM	18mm	P	E	TC	TC	95
DC100T, DC100D, DC10044, DC10062, DC10064, DU100T, DU10062, DU10064	Cum	6-4 1/2 x 6	CI	Top	40-1900				.012	.012								
BANTAM																		
(1936-39)	Own	4-2x3	Al	Top	6.5-30	19" B	4 1/4"	.011	.011	.012	Ch	HIO	14mm	.025	.022	TC	TC	120
1940	Own	4-2 1/2 x 3 1/2	A	Top	30-50	19" B	4 1/4"	.011	.011	.012	Ch	HIO	14mm	.025	.022	4" B		135
BROCKWAY																		
78 (1936-40)	Con 24B	6-3 1/2 x 4 1/2	CI	Top	20-20	2" B	1 1/2" B	.015	.010	.010	Ch	8 COM	18mm	.025	.020	8" B	2 1/2" B	95
87, 90X (1936)	Con 28B	6-3 1/2 x 4 1/2	Al	Top	20-20	5" B	1 1/2" B	.012	.008	.010	Ch	0 COM	3/8	.025	.020	5" B	1 1/2" B	95
83, 88, 92, 94 (1936-40)	Con 25B	6-3 1/2 x 4 1/2	Al	Top	20-20	5" B	1 1/2" B	.012	.008	.010	Ch	8 COM	18mm	.025	.020	5" B	1 1/2" B	95
125X (1936-40)	Con 31B	6-3 1/2 x 4 1/2	CI	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
96, 110, 130 (1936-40)	Con 29B	6-3 1/2 x 4 1/2	CI	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
145 (1936-40)	Con 31B	6-3 1/2 x 4 1/2	CI	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
150X4, 150X5 (1936-40)	Con 32B	6-4 1/2 x 4 1/2	CI	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
160X, 180XSBT, 165X (1936-40)	Con 32B	6-4 1/2 x 4 1/2	Al	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
170X (1936-40)	Con 33B	6-4 1/2 x 4 1/2	Al	Top	30-20	5" B	2B	.014	.012	.015	Ch	8 COM	18mm	.025	.020	15" B	5 1/2" B	82
175X, 180X-SBT Spec., 220X (1936-40)	Con 34B	6-4 1/2 x 4 1/2	Al	Top	30-20	5" B	2B	.014	.012	.015	Ch	8 COM	18mm	.025	.020	15" B	5 1/2" B	82
195X (1936-40)	Con 33B	6-4 1/2 x 4 1/2	Al	Top	30-20	5" B	2B	.014	.012	.015	Ch	8 COM	18mm	.025	.020	15" B	5 1/2" B	82
240X, 260X (1936-40)	Con 35B	6-4 1/2 x 5 1/2	Al	Top	30-20	5" B	2B	.014	.012	.015	Ch	8 COM	18mm	.025	.020	15" B	5 1/2" B	82
112, 128 (1936-40)	Con 38B	6-3 1/2 x 4 1/2	Al	Top	30-20	8" B	2 1/2" B	.015	.012	.012	Ch	8 COM	18mm	.025	.020	8 1/2" B	3B	90
78 (1941)	Con 24B	6-3 1/2 x 4 1/2	CI	Top	35-2000	TC	TC	.014	.014C	.014C	Ch	6 COM	18mm	.025	.020	TC		
83, 88, 92, 94 (1941)	Con 25B	6-3 1/2 x 4 1/2	Al	Top	40-2000	TC	TC	.014	.014C	.014C	Ch	6 COM	18mm	.025	.020	8" B		
112-128 (1941)	Con 38B	6-3 1/2 x 4 1/2	Al	Top	40-2000	6 1/2" B		.0175	.017C	.024C	Ch	6 COM	18mm	.025	.020	6" B		
146, 147, 152 (1941)	Con 40B	6-4x4 1/2	Al	Top	40-2000	6" B		.0175	.017C	.024C	Ch	6 COM	18mm	.025	.020	6" B		
153, 154, 162 (1941)	Con 41B	6-4 1/2 x 4 1/2	Al	Top	55-2500	6 1/2" B		.022	.017C	.024C	Ch	6 COM	18mm	.025	.020	6" B		
156, 166 (1941)	Con 42B	6-4 1/2 x 4 1/2	Al	Top	55-2500	6 1/2" B		.022	.017C	.024C	Ch	6 COM	18mm	.025	.020	6" B		
170X, 195X (1941)	Con 33B	6-4 1/2 x 4 1/2	Al	Top	30-2300	5" B		.014	.018C	.018C	Ch	6 COM	18mm	.025	.020	15" B		
175X, 220X (1941)	Con 34B	6-4 1/2 x 4 1/2	Al	Top	30-2300	5" B		.014	.018C	.018C	Ch	6 COM	18mm	.025	.020	15" B		
240X, 260X (1941)	Con 35B	6-4 1/2 x 5 1/2	Al	Top	30-2300	5" B		.014	.018C	.018C	Ch	6 COM	18mm	.025	.020	15" B		
CHEVROLET																		
1/2, 1 1/4 Ton (1934)	Own	6-3 1/2 x 4	CI	Top		4" B	1 1/2" B	.006	.006	.013	AC	K10	14mm	.032	.018	10" B	3 1/2" B	85
1/2, 1 1/4 Ton (1935)	Own	6-3 1/2 x 4	CI	Top		8" B	3B	.006	.006	.013	AC	K11	14mm	.032	.018	5" B	1 1/2" B	90
1/2, 1 1/4 Ton (1936)	Own	6-3 1/2 x 4	CI	Top		9" B	3 1/2" B	.006	.006	.013	AC	K11	14mm	.032	.018	5" B	1 1/2" B	110

OIL PRESSURES . . . CONNECTING ROD DATA



AND ABBREVIATIONS

*Severe Service
 Q—Qta.
 Bud—Buda
 Cal—Caterpillar
 Con—Continental
 Cum—Cummins
 Her—Hercules
 Lye—Lycoming
 Opt—Optional
 Var—Variable
 Wau—Waukesha
 A—019-023
 S—023-028

Z—018-022
 ZZ—025-030
 V—012-014
 Y—011-012C
 YY—014-016
 SS—Semi Steel
 COM—Commercial
 H—015-025
 E—018-020
 D—018-024
 K—020-025
 P—018-023
 R—028-032

Wheel Teeth TC
 B—Before
 A—After
 Comp. Pressure at
 Cranking Speed

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rod Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B—Before A—After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG				Breaker Point Gap	Spark Occurs °C B—Before A—After	Spark Occurs Fly- Wheel Teeth °C B—Before A—After	Comp. Pressure at Cranking Speed
						°TC	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size	Gap				
CHEVROLET—Continued																		
1 1/2 Ton (1937)	Own	6-3 1/2 x 3 3/4	CI	Top	134-2621	9°B	3 1/2 B	.006	.006	.013	AC	K11	14mm	.040	.018	5°B	90	
1 1/2 Ton (1938)	Own	6-3 1/2 x 3 3/4	CI	Top	134-2621	9°B	3 1/2 B	.006	.006	.013	AC	46	14mm	.040	.018	5°B	90	
1 1/2 Ton (1939)	Own	6-3 1/2 x 3 3/4	CI	Top	134-2621	9°B	3 1/2 B	.006	.006	.013	AC	44	14mm	.040	.018	5°B	90	
1 1/2 Ton (1940)	Own	6-3 1/2 x 3 3/4	CI	Top	14-2000	3°B	1 1/2 B	.006	.006	.013	AC	44	10mm	.040	.018	5°B	90	
1 1/2 Ton (1941)	Own	6-3 1/2 x 3 3/4	CI	Top	14-2000	3°B	1 1/2 B	.006	.006	.013	AC	104	14mm	.040	.018	5°B	90	
CORBITT																		
12B (1936)	Wau 6RL	6-3 1/2 x 4 1/2	AI	Top	40-1500	TC	TC	.010	.010-.012	.010-.012	AC	D8-D10	18mm	.030	.025	5°B	112	
15, 14B (1936-37)	Wau 6BK	6-3 1/2 x 4 1/2	AI	Top	40-1500	TC	TC	.010	.012-.014	.012-.014	AC	D8-D10	18mm	.030	.025	5°B	112	
14BT, Series 18, F18, Series 22 (1936-37)	Wau 6MK	6-4 1/2 x 4 1/2	CI	Top	40-1500	7°A		.006	.008-.010	.012-.014	AC	D8-D10	18mm	.030	.025	7°B	80	
Series 27D (1936)	Wau 6SRL	6-4 1/2 x 5 1/2	AI	Top	40-1500	6°A		.009	.008-.010	.016-.018	AC	L8-L10	3/8	.030	.025	TC	80	
F27, Series 35, 40 (1936-37)	Wau 6SRK	6-4 1/2 x 5 1/2	AI	Top	40-1500	7°A		.006	.008-.010	.016-.018	AC	L8-L10	3/8	.030	.025	7°B	80	
F12 (1936)	Wau 6BL	6-3 1/2 x 4 1/2	AI	Top	40-1500	TC	TC	.010	.010-.012	.010-.012	AC	D8-D10	18mm	.030	.025	5°B	112	
F23 (1936)	Wau 6SRL	6-4 1/2 x 5 1/2	AI	Top	40-1500	6°A		.009	.008-.010	.016-.018	AC	L8-L10	3/8	.030	.025	TC	80	
F35 (1936)	Wau 6RB	6-4 1/2 x 5 1/2	AI	Top	40-1500	9°A		.006	.008-.010	.016-.018	AC	L8-L10	3/8	.030	.025	7°B	81	
12B (1937)	Lyc WFC	6-3 1/2 x 4 1/2	AI	Top	40-1500	TC	TC	.010	.010-.012	.010-.012	AC	KL-8	14mm	.030	.025	5°B	112	
18BT, 22B (1937)	Wau 6MZ	6-4 1/2 x 4 1/2	AI	Top	40-1500	7°A		.006	.008-.010	.012-.014	AC	D8-D10	18mm	.030	.025	7°B	80	
22BT, F23 (1937)	Con 20-R	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	1.9	.01365	.010-.012	.017-.018	AC		18mm	.030	.025			
27DT (1937)	Con 21-R	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	1.9	.01365	.010-.012	.017-.018	AC		18mm	.030	.025			
13B, F12 (1937-41)	Con A6244	6-3 1/2 x 4 1/2	AI	Top	40-1500	5°B	1 1/2 B	.012	.010	.012	AC	D8-D10	18mm	.030	.025	5°B	1 1/2 B	
17B, 14BT, F12 (1937-41)	Con M6290	6-3 1/2 x 4 1/2	AI	Top	40-1500	5°B	1 1/2 B	.012	.010	.012	AC	D8-D10	18mm	.030	.025	5°B	1 1/2 B	
21B, F18 (1937-41)	Con E802	6-4 1/2 x 4 1/2	AI	Top	40-1500	8°B	2 1/2 B	.012	.007	.012	AC	D8-D10	18mm	.030	.025	8°B	102	
26D, 18BT (1937-41)	Con E803	6-4 1/2 x 4 1/2	AI	Top	40-1500	8°B	2 1/2 B	.012	.007	.012	AC	D8-D10	18mm	.030	.025	8°B	99	
22BT, F27 (1937-41)	Con 21R	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	2B	.014	.012	.015	AC	D8-D10	18mm	.030	.025	10°B	78	
27DT, F35 (1937-41)	Con 22R	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	2B	.014	.012	.015	AC	D8-D10	18mm	.030	.025	10°B	78	
F14 (1937-39)	Con M6271	6-3 1/2 x 4 1/2	AI	Top	40-1500	5°B	1 1/2 B	.012	.010	.012	AC	D8-D10	18mm	.030	.025	5°B	1 1/2 B	
17BT, F19 (1937-41)	Con M6330	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	1 1/2 B	.012	.010	.012	AC	D8-D10	18mm	.030	.025	5°B	1 1/2 B	
F23 (1941)	Con 20R	6-4 1/2 x 4 1/2	AI	Top	40-1500	5°B	2B	.014	.012	.015	AC	D8-D10	18mm	.030	.025	10°B	3 1/2 B	
D18BT (1940-41)	Cum A600	6-4 1/2 x 6	CI	Top	40-1500													
D27BT (1940-41)	Cum HB6	6-4 1/2 x 6	CI	Top	40-1500				.012	.012								
DIAMOND T																		
211, 227, 243, 212A, 212B, 228, 401, 402, 404, 405 (1935-1938)	Her JXA	6-3 1/2 x 4 1/2	CI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	76	3/8	.027	.020	TC	TC	
220, 311, 221, 244, 313, 406, 507, 509, 611 (1935-38)	Her JXB	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	76	3/8	.027	.020	TC	TC	
312, 351C, 320, 353, 607, 612, 613 (1935-38)	Her JXC	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	76	3/8	.027	.020	TC	TC	
352, 360, 614 (1935-38), 614, 614C (1939)	Her JXD	6-4 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	76	3/8	.027	.020	TC	TC	
412B (1935)	Her WXL	6-4 1/2 x 4 1/2	AI	Top	25-30	2°A	1 1/2 A	.010	.006	.010	AC	76	3/8	.027	.020	TC	TC	
412DR, 512B, 512DR (1935-38), 803C, 804C (1939)	Her WXL3	6-4 1/2 x 4 1/2	AI	Top	25-30	2°A	1 1/2 A	.010	.008	.010	AC	76	3/8	.027	.020	TC	TC	
80, 301 (1936-38), 201, 201C (1939)	Her QXB3	6-3 1/2 x 4 1/2	CI	Top	25-30	5°A	1 1/2 A	.006	.006	.009	AC	75	3/8	.027	.020	TC	TC	
304, 401 (1937-38), 305, 305C, 306, 306C (1939)	Her QXC3	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.009	AC	75	3/8	.027	.020	TC	TC	
404, 404C (1939)	Her JXE3	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.006	.008	AC	73	3/8	.027	.020	TC	TC	
406, 509, 509C (1939)	Her JXB	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	73	3/8	.027	.020	TC	TC	
612, 612C (1939)	Her JXC	6-3 1/2 x 4 1/2	AI	Top	25-30	5°A	1 1/2 A	.006	.008	.010	AC	73	3/8	.027	.020	TC	TC	
201 (1940-41)	Her QXB3	6-3 1/2 x 4 1/2	CI	Top	25-35	5°A	1 1/2 A	.006	.008	.008	AC	44	14mm	.027	.020	TC	TC	
305, 306, 306SC (1940-41)	Her QXC3	6-3 1/2 x 4 1/2	AI	Top	25-35	5°A	1 1/2 A	.006	.006	.008	AC	44	14mm	.027	.020	TC	TC	
404, 404SC (1940)	Her JXE3	6-3 1/2 x 4 1/2	AI	Top	25-35	2°A	1 1/2 A	.010	.006	.010	AC	44	14mm	.027	.020	TC	TC	
406, 509, 509C (1940-41)	Her JXB	6-3 1/2 x 4 1/2	AI	Top	25-35	2°A	1 1/2 A	.010	.008	.010	AC	44	14mm	.027	.020	TC	TC	
612, 612C (1940-41)	Her JXC	6-3 1/2 x 4 1/2	AI	Top	25-35	2°A	1 1/2 A	.010	.008	.010	AC	44	14mm	.027	.020	TC	TC	
614, 614C (1940-41)	Her JXD	6-4 1/2 x 4 1/2	AI	Top	25-35	5°A	1 1/2 A	.010	.006	.010	AC	44	14mm	.027	.020	TC	TC	
404C (1940-41)	Her JXE3	6-3 1/2 x 4 1/2	AI	Top	25-35	2°A	1 1/2 A	.010	.008	.010	AC	44	14mm	.027	.020	TC	TC	
803C, 804C, 805, 806 (1940-41)	Her WXL3	6-4 1/2 x 4 1/2	AI	Top	25-35	5°A	1 1/2 A	.010	.006	.010	AC	44	14mm	.027	.020	TC	TC	
900 (1940-41)	Her RXLC3	6-4 1/2 x 5 1/2	AI	Top	25-35	2°A	1 1/2 A	.010	.006	.010	AC	44	14mm	.027	.020	TC	TC	
DODGE																		
KC, KCL, KH, Series LC	Own 201 cu.in.	6-3 1/2 x 4 1/2	AI	Top	30-40-30	6°A	2 1/2 A	.011	.006	.008	AC	K9	14mm	.025	.020	3°A	1 1/2 A	
K32, K33, K34	Own 217 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.011	.006	.008	AC	K9	14mm	.025	.020	2°A	1 1/2 A	
K35, K36, K37, K38, K45, K46, K47, K48	Own 241 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.011	.006	.008	AC	K9	14mm	.025	.020	TC	TC	
K50, K51, K52, K70, K71, K72	Own 309 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.010	.008	.010	AC	K9	14mm	.025	.020	4°B	1 1/2 B	
LE Series	Own 201 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.011	.006	.010	AC	K9	14mm	.025	.020	3°A	1 1/2 A	
LF Series	Own 217 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.011	.006	.010	AC	K9	14mm	.025	.020	2°A	1 1/2 A	
LG, LH Series	Own 309 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.010	.006	.010	AC	K9	14mm	.025	.020	TC	TC	
K50V, K51V, K52V, K60V, K61V, K62V	Own 241 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.010	.008	.010	AC	K9	14mm	.025	.020	3°B	1 1/2 B	
MC, RC (1937-38)	Own 218 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.014	.008	.012	Ch	J8	14mm	.025	.020	TC	TC	
RD, MD Series (1937-38)	Own 218 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.014	.008	.012	Ch	J8	14mm	.025	.020	TC	TC	
RE, ME Series (1937-38)	Own 218 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.014	.008	.012	Ch	J8	14mm	.025	.020	4°B	1 1/2 B	
RF, MF Series (1937-38)	Own 228 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.014	.008	.012	Ch	J8	14mm	.025	.020	4°B	1 1/2 B	
RG, RH, MG, MH Series (1937-38)	Own 241 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	TC	TC	.014	.008	.012	Ch	J8	14mm	.025	.020	6°B	2 1/2 B	
RL, RK, RO, RP, ML, MK Series (1937-38)	Own 333 cu.in.	6-3 1/2 x 5 1/2	As	Top	30-40-30	6°A	2 1/2 A	.011	.008	.012	Ch	J8	14mm	.025	.020	6°B	2 1/2 B	
TC (1939)	Own 201 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.014	.006	.010	AI	A7	14mm	.025	.020	TC	TC	
TD (1939)	Own 218 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	6°A	2 1/2 A	.014	.006	.010	Ch	J8	14mm	.025	.020	TC	TC	
TE (1939)	Own 218 cu.in.	6-3 1/2 x 4 1/2	As	Top	30-40-30	8°B	3A	.014	.006	.012	Ch	J8	14mm	.025	.020	2°B	1 1/2 B	

ENGINE SERVICE SPECIFICATIONS—Continued

(Key to Abbreviations on pages 34 and 35)

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After	Intake Valve Closes B-Before A-After	Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG			Breaker Point Gap	Spark Occurs TC B-Before A-After	Spark Occurs Fly- Wheel Teeth TC B-Before A-After	Comp. Pressure at Cranking Speed	
									Intake	Exhaust	Make	Type	Size					Gap
DODGE—Continued																		
TF (1939)	Own 228 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	8"B	3A	.014	.008	.012	Ch	J8	14mm	.025	.020	4"B	1 $\frac{1}{2}$ "B	115
TG, TH (1939)	Own 241 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	8"B	3A	.014	.008	.012	Ch	J8	14mm	.025	.020	6"B	2 $\frac{1}{2}$ "B	116
TL, TK (1939)	Own 331 cu.in.	6-3 $\frac{1}{2}$ x5	As	Top	30-40-30	6"A	2A	.014	.008	.012	Al	A7	14mm	.025	.020	2"B	1 $\frac{1}{2}$ "B	86
TLD, TKD (1939)	Own 331 cu.in.	6-3 $\frac{1}{2}$ x5	As	Top	30-40-30	31"B		.017	.013	.013			Die sel					
VC (1940)	Own 201 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	6"A	2 $\frac{1}{2}$ "A	.014	.006	.010	Al	A7	14mm	.025	.020	TC	TC	115
VD (1940)	Own 218 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	6"A	2 $\frac{1}{2}$ "A	.014	.006	.010	Al	A7	14mm	.025	.020	TC	TC	113
VF, VM (1940)	Own 228 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	12"B	5B	.014	.008	.012	Al	A7	14mm	.025	.020	TC	TC	120
VG, VH (1940)	Own 241 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	12"B	5B	.014	.008	.012	Al	A7	14mm	.025	.020	TC	TC	120
VL, VK, WL, WK (1940-41)	Own 331 cu.in.	6-3 $\frac{1}{2}$ x5	As	Top	30-40-30	6"A	2 $\frac{1}{2}$ "A	.014	.008	.012	Ch	J8	14mm	.025	.020	2"A	3/4"	96
VLD, VKD, WLD, WKD (1940-41)	Own 331 cu.in.	6-3 $\frac{1}{2}$ x5	As	Top	30-40-30	31"B	15B	.017	.013	.013			Die sel					
WC (1941)	Own 201 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	9"B		.014	.008	.010	Al	A7A	14mm	.025	.020	TC	TC	115
WD (1941)	Own 218 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	9"B		.014	.008	.010	Al	A7A	14mm	.025	.020	TC	TC	113
WF, WFM (1941)	Own 228 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	12"B	5B	.014	.008	.012	Al	A7A	14mm	.025	.020	TC	TC	120
WG, WH, WGM, WHM (1941)	Own 241 cu.in.	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30-40-30	12"B	5B	.014	.008	.012	Al	A7A	14mm	.025	.020	TC	TC	120
FEDERAL																		
15K, 15, 15K, 75, 75H, 75K	Her JXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	25-1500	5"A	1 $\frac{1}{2}$ "A	.006	.008	.010	AC		7/8	.025	.020	TC	TC	
18K, 18K, 20, 20K, 21, 22, 80, 80H, 80K	Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	25-1500	5"A	1 $\frac{1}{2}$ "A	.006	.008	.010	AC		7/8	.025	.020	TC	TC	
25, 25K, 85, 85H, 85K	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	25-1500	5"A	1 $\frac{1}{2}$ "A	.006	.008	.010	AC		7/8	.025	.020	TC	TC	
30	Wau 6MS	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	35-1500	8"A	3A	.004	.010	.012	AC	86	18mm	.025	.020	TC	TC	80
40, 40F	Wau 6MK	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	35-1500	8"A	3A	.004	.010	.012	AC	86	18mm	.025	.020	TC	TC	80
50, 50F	Wau 6MZ	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	35-1500	8"A	3A	.004	.010	.012	AC		7/8	.025	.020	TC	TC	80
63, 66, C7, C8, C7W, C8W, C8H	Wau 6SRK	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$		Top	35-1500	10"A	3 $\frac{1}{2}$ "A	.004	.010	.012	AC		7/8	.025	.020	TC	TC	80
DM (1936)	Con W10	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$									AC		7/8	.025	.020	TC	TC	
10	Her OOB	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	16-1100	5"A		.008	.008	.012	AC		7/8	.025	.020	TC	TC	
28	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	26-2600	5"A		.008	.008	.010	AC		7/8	.025	.020	TC	TC	
29, 29K, 67H, 80, 89K	Her JXD	6-4x4 $\frac{1}{2}$		Top	26-2600	5"A		.008	.008	.010	AC		7/8	.025	.020	TC	TC	
40DR	Wau 6MK	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	35-1500	8"A	3A	.008	.008	.016	AC		7/8	.025	.020	TC	TC	
T108, T10W	Con 18R	6-4x4 $\frac{1}{2}$		Top	35-1500						AC		7/8	.025	.020	TC	TC	
X8RDR-X8R, 7, 7M	Wau 6SRK	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$		Top	35-1500	10"A	3A	.004	.008	.016	AC		7/8	.025	.020	TC	TC	80
9	Con 4140	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	25-1500	TC	TC	.014	.010	.012	AC	86	18mm	.025	.020	TC	TC	
11, 11K, 11H	Her OXB3	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$		Top	25-1500			.006	.006	.008	AC		7/8	.025	.020	TC	TC	
12K, 14K	Her OXC3	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	25-1500			.008	.008	.008	AC		7/8	.025	.020	TC	TC	
62, 65	Con 22R	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	25-1500			.014	.013	.018	AC	86	18mm	.025	.020	TC	TC	78
8, 11, M8, M11 (1940-41)	Her OXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2500	5"B		.006	.006	.008	AC	44	14mm	.025	.020	10"B	3B	
12, 14, M12, M14 (1940)	Her OXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2500	5"B		.006	.006	.008	AC	44	14mm	.025	.020	10"B	3B	
15, 75 (1940)	Her JXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	96
18, 20, 80 (1940-41)	Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	96
25, 85 (1940-41)	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	96
29, 29H, 89, 89H (1940-41)	Her JXD	6-4x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	96
40 (1940)	Wau 6MKR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	35-1500	8"A	3A	.004	.010	.012	AC	84	18mm	.025	.020	3"B	1B	
50, 50H (1940)	Wau 6MZR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	35-1500	8"A	3A	.004	.010	.012	AC	84	18mm	.025	.020	3"B	1B	
63, 66 (1940-41)	Wau 6SRK	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	35-1500	10"A	3A	.004	.010	.012	AC	73	7/8	.025	.020	10"B	3B	
62, 65 (1940-41)	Con 22R	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	30-1000			.014	.012	.012	AC	83	7/8	.025	.020	15"B		
16, 76 (1941)	Her JXF	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	
17, 77 (1941)	Her JXG	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	5"A		.008	.006	.006	AC	44	14mm	.025	.020	10"B	3B	
35, 90 (1941)	Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	2"A		.010	.008	.010	AC	44	14mm	.025	.020	TC	TC	
45, 55, 92, 94 (1941)	Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2500	2"A		.010	.008	.010	AC	44	14mm	.025	.020	TC	TC	
FORD																		
51, V8 (1935-36)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	CA	Top	30-2000	9 $\frac{1}{2}$ "B	3B	Y	Y	Y	Ch	7	18mm	.025	YY	4"B	1 $\frac{1}{2}$ "B	90
75, V8 (1937)	Own	8-2 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-3200	9 $\frac{1}{2}$ "B		Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		110
79 V8 (1937)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-2000	9 $\frac{1}{2}$ "B		Y	Y	Y	Ch	H10	18mm	.025	YY	4"B		100
81T, 817T, 81Y, 81C (1938)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		100
82Y, 82C (1938)	Own	8-2 $\frac{1}{2}$ x3 $\frac{1}{2}$	CA	Top	30-2000	9 $\frac{1}{2}$ "B		Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		105
91T, 917T, 911W, 91W, 917W, 91Y, 91C (1939)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		100
99T, 997T, 991W, 99W, 997W (1939)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		100
92Y, 922C, 92D, 92Y, 922C (1939-40)	Own	8-2 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-2000	9 $\frac{1}{2}$ "B		Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		105
018T, 01T, 01W, 011W, 01D, 01Y, 01C (1940)	Own	8-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		100
096T, 09T, 09W, 091W (1940)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	YY	4"B		100
118T, 11T, 11W, 111W, 11D, 11Y, 11C, 11U (1941)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H9	14mm	.032	YY	4"B		100
119T, 19T, 19W, 191W, 19U, 196T (1941)	Own	8-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H9	14mm	.032	YY	4"B		100
IND, INY, INC (1941)	Own	4-3 $\frac{1}{2}$ x3 $\frac{1}{$																

ENGINE SERVICE SPECIFICATIONS—Continued

(Key to Abbreviations on pages 34 and 35)

Wheel Teeth B-Before A-After	Comp. Pressure at Cranking Speed	TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG			Breaker Point Gap	Spark Occurs °C B-Before A-After	Spark Occurs Fly- Wheel Teeth °C B-Before A-After	Comp. Pressure at Cranking Speed	
								°TC	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size					Gap
GENERAL MOTORS—Continued																				
		T33, F33, T33H, F33H (1937)	Own 286	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	30—	4°B		V	V	V	AC	K7	14mm	.035	Z	15°B		
		T46, F46 (1937)	Own 331	6-3 $\frac{1}{2}$ x5	Al	Bot	42-2400	8 $\frac{1}{2}$ °A		V	V	V	AC	K7	14mm	.035	Z	15°B		
		T46, 400, F46 (1937)	Own 400	6-4 $\frac{1}{2}$ x5	Al	Top	42—	8 $\frac{1}{2}$ °A		V	V	V	AC	K7	14mm	.035	Z	15°B		
		T61, F61 (1937)	Own 400	6-4 $\frac{1}{2}$ x5	Al	Top	42—	8 $\frac{1}{2}$ °A		.008	V	V	AC	K7	14mm	.035	Z	15°B		
		T61, F61 (1937)	Opt 450	6-4 $\frac{1}{2}$ x5	Al	Top	42—	8°B		.008	V	V	AC	K7	14mm	.035	Z	15°B		
		T61H, F61H (1937)	Own 400	6-4 $\frac{1}{2}$ x5	Al	Top	42—	8°B		.008	V	V	AC	K7	14mm	.035	Z	15°B		
		T61H, F61H (1937)	Opt 450	6-4 $\frac{1}{2}$ x5	Al	Top	42—	8°B		.008	V	V	AC	K7	14mm	.035	Z	15°B		
		T14, T14S, T15, T15S (1938)	Own 223	6-3 $\frac{1}{2}$ x4	CI	Top	35-45	5°B		.0125	.012	.012	AC	45	14mm	.030	D	5°B		
		T16, T16H, F16, F16H (1938)	Own 230	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	28-35	5°B		.008	.011	.011	AC	45	14mm	.030	D	TC	TC	
		T16, F16, T16H, F16H (1938)	Own 239	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	35—	4°B		.012	V	V	AC	K7	14mm	.035	D	15°B		
		T23, T23H, F23, F23H (1938)	Own 257	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	35—	4°B		.012	V	V	AC	K7	14mm	.035	D	15°B		
		T33, T33H, F33, F33H (1938)	Own 286	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	35—	4°B		.012	V	V	AC	K7	14mm	.035	D	15°B		
		T46, F46 (1938)	Own 331	6-3 $\frac{1}{2}$ x5	Al	Top	42-2400	18°A		.012	V	V	AC	K7	14mm	.035	Z	15°B		
		T61, T61H, F61, F61H (1938)	Own 400	6-4 $\frac{1}{2}$ x5	Al	Top	42-45	18°A		.012	V	V	AC	K7	14mm	.035	Z	15°B		
		AC100, CC100, AC150, CC150, AC200, CC200, AC250, CC250 (1939-41)	Own 228	6-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	Al	Top	40-1000	28°B	10 $\frac{1}{2}$ B		.008	.013	AC	44	14mm	.035	D	TC	TC	
		AC300, CC300, AF300, AC350, CC350, AF350 (1939-41)	Own 228	6-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	Al	Top	40-1000	28°B	10 $\frac{1}{2}$ B		.008	.013	AC	44	14mm	.025	D	TC	TC	
		AC400, AF400, CC400, CF400, AC450, CC450, CF450, AF400 (1939-41)	Own 248	6-3 $\frac{1}{2}$ x3 $\frac{1}{2}$	Al	Top	40-1000	28°B	10 $\frac{1}{2}$ B		.008	.013	AC	44	14mm	.025	D			
		AC500, AF500, AC550, AF550 (1939-40)	Own 278	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-1000	4°B		.012	.012	.012	AC	44	14mm	.025	D			
		AC600, AF600, AC650, AF650 (1939-40)	Own 308	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-1000	4°B		.012	.012	.012	AC	44	14mm	.025	D			
		AC700, AF700 (1939-40)	Own 361	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-1000	8°B		.012	.012	.012	AC	44	14mm	.025	D			
		AC800, AF800 (1939-40)	Own 426	6-4 $\frac{1}{2}$ x5	Al	Top	40-1000	8°B		.012	.012	.012	AC	44	14mm	.025	D			
		AC850, AF850 (1939-40)	Own 451	6-4 $\frac{1}{2}$ x5	Al	Top	40-1000	8°B		.012	.012	.012	AC	44	14mm	.025	D			
		GRAMM																		
		15 (1937-39), 11, 21 (1940)	Her QXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	26-2600	5°A		.006	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		103
		25, 30 (1937-39)	Her JXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	26-2600	5°A		.008	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		110
		40, 45, 50 (1937-39), 46, 56 (1940-41)	Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	26-2600	5°A		.008	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		102
		56, 70 (1937-39), 71 (1940-41)	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	26-2600	5°A		.008	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		101
		75, 85 (1937-39), 76, 86 (1940-41)	Her JXD	6-4x4 $\frac{1}{2}$	Al	Top	26-2600	5°A		.008	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		101
		DJX55, DJX40, DJX70 (1937-39), D46, D56 (1940-41)	Her DJXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2000	12°B		.016	.016	.016	No	Die sel					150	
		DJX75, DJX85 (1937-39), D71 (1940-41)	Her DJXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	40-2000	12°B		.016	.016	.016	Die sel						150	
		31, 41 (1940-41)	Her QXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	26-2600	5°A		.006	.008	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		103
		96 (1940-41)	Her WXL3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	26-2600	2°A		.010	.006	.010	Ch	3 COM	$\frac{7}{8}$	.025	.020		106
		D76 (1940-41)	Bud 6DT317	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	35-1500	20°B		.016	.016	.016	Die sel						150	
		D86, D96 (1940-41)	Bud 6DT389	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	35-1500	12°B		.016	.016	.016	Die sel						150	
		HUG																		
		15	Wau 6BL	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	30-1000	TC	TC	.010	.006-.003	.010-.012	Ch	COM 7	18mm	.025	H	25°B	8B	112
		19 (1939), 19W, 83W (1940)	Wau 6BK	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1500	TC	TC	.010	.010-.012	.014-.016	Ch	COM 7	18mm	.025	H	25°B	8B	112
		23	Bud H298	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	30-1000	TC	TC	.006	.006H	.003H	Ch	COM 7	18mm	.025	H	27°B	9 $\frac{1}{2}$ B	83
		42, 70	Bud K369	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	SS	Top	30-1000	TC	TC	.006	.006H	.003H	Ch	COM 7	18mm	.025	H	30°B	10 $\frac{1}{2}$ B	82
		43A, 43T, 87K, 87Q, 43-4, 87K4	Bud K428	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	SS	Top	30-1000	TC	TC	.006	.006H	.003H	Ch	COM 7	18mm	.025	H	27°B	9 $\frac{1}{2}$ B	84
		43L, 97L, 97LD, 87Q4	Bud L525	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	SS	Top	30-1000	TC	TC	.006	.006H	.003H	Ch	COM 7	18mm	.025	H	22°B	7 $\frac{1}{2}$ B	83
		99	Bud GF6	6-4 $\frac{1}{2}$ x6	CI	Bot	30-1000	5°A	2 $\frac{1}{2}$ A	.010	.010C	.016C	Ch	COM 7	18mm	.025	H	20°B	8 $\frac{1}{2}$ B	72
		15W (1940-41)	Wau 6BM	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1500	TC	TC	.010	.010-.012	.014-.016	Ch	COM 7	18mm	.025	.025	25°B	8°B	112
		23W, 85W (1940-41)	Wau 6BZ	6-4x4 $\frac{1}{2}$	CI	Top	40-1500	TC	TC	.010	.010-.012	.014-.016	Ch	COM 7	18mm	.025	.025	25°B	8°B	112
		42W, 87W (1940-41)	Wau 6MZR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1500	8°A	3A	.004	.010-.012	.014-.016	Ch	COM 7	18mm	.025	.025	25°B	8°B	90
		43W, 46-4 (1940-41)	Wau 6GAL	6-5x5 $\frac{1}{2}$	CI	Top	40-1500	TC	TC	.008	.010-.012	.014-.016	Ch	COM 7	18mm	.025	.025	25°B	8°B	112
		44-4 (1940-41)	Wau 6SRLR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	CI	Top	40-1500	10°A	3A	.004	.008-0.10	.016-0.18	Ch	COM 2	$\frac{7}{8}$.025	.025	22°B	7B	90
		45-4 920 (1940-41)	Wau 6SRKR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	CI	Top	40-1500	10°A	3A	.004	.008-0.10	.016-0.18	Ch	COM 2	$\frac{7}{8}$.025	.025	22°B	7B	80
		98, 99, 99S, 98CD, 98MB (1940-41)	Wau 6RBR	6-5x5 $\frac{1}{2}$	Al	Top	40-1500	10°A	4A	.008	.008-9	.010-0.12	Ch	COM 1	$\frac{7}{8}$.025	.025	17°B	6B	78
		23W, 85W (1941)	Wau 6BZ	6-4x4 $\frac{1}{2}$	CI	Top	40-1500	TC	TC	.010	.010-0.12	.014-0.16	Ch	COM 7	18mm	.025	.025			90
		INDIANA																		
		84, 85, 86, 87	Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	26-2600	5°A	1 $\frac{1}{2}$ A	.010	.008	.010	COM 1	$\frac{7}{8}$	.022	E	TC	TC	87
		95, 95DR, 95SW75, 95SBT151	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	26-2600	5°A	1 $\frac{1}{2}$ A	.010	.008	.010	COM 1	$\frac{7}{8}$	.022	E	TC	TC	414
		17, 17DR, 17SW251, 17SBT251, 19DR	Her YXC	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	26-2600	2°A	$\frac{3}{4}$ A	.012	.010	.012	COM 1	$\frac{7}{8}$	.022	E	TC	TC	91
		17A, 17ADR, 17ASW251	Her WXC	6-4x4 $\frac{1}{2}$	Al	Top	26-2600	2°A	$\frac{3}{4}$ A	.012	.010	.012	COM 1	$\frac{7}{8}$	.022	E	TC	TC	92
		84	Her OOB	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	26-2400	5°A	1 $\frac{1}{2}$ A	.010	.008	.010	COM 1	$\frac{7}{8}$	.022	E	TC	TC	
		INTERNATIONAL																		
		CI, C15, C30, CS30, C30S	Own HD3	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	25-600	TC	TC	.010	.010	.010	AC	G9	18mm	K	D	8°B	1 $\frac{1}{2}$ B	95
		A1, A2, B2, M2, M3, C10, C20, CS20	Wau XAH	4																

ENGINE SERVICE SPECIFICATIONS—Continued

(Key to Abbreviations on pages 34 and 35)

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Platen Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG			Breaker Point Gap	Spark Occurs TTC B-Before A-After	Spark Occurs TTC B-Before A-After	Comp. Pressure at Cranking Speed					
						°C	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size									
KENWORTH																						
88, 89, 89SBT, 89SW, 90	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.006	.006	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
127	Her WXC	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.010	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
128	Her WXC2	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.010	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
146B	Bud K393	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.010	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
186	Her YXC2	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.010	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
241	Her RXB	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.010	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
513 (1938)	Her JXD	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.009	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC					
525, 526, 527, 528, 541, 542 (1938-40-41)	Bud L0525	6-4x4 $\frac{1}{2}$	AI	Top	25-1000	10°B		.009	.009	.012			14mm	.025	.020	10°B						
529, 530, 531, 532, 539, 540 (1938)	Bud K428	6-4x4 $\frac{1}{2}$	AI	Top	25-1000	TC	TC	.006	.006	.008			18mm	.025	.015	10°B						
533, 534, 535 (1938)	Bud K393	6-4x4 $\frac{1}{2}$	SS	Top	25-1000	TC	TC	.006	.006	.008			18mm	.025	.015	10°B						
536, 537, 538 (1938)	Her JXM	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.006	.006			$\frac{7}{8}$	.025	.020	TC					
563, 564, 565, 568 (1940-41)	Her WXLG3	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.010	.006	.010			$\frac{7}{8}$	.025	.020	16°B					
536, 537, 538, 543, 544, 545, 560, 561, 562, 563 (1940-41)	Her JXDM	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.008	.010			$\frac{7}{8}$	.025	.020	TC					
505, 506, 507, 508, 509, 513, 514, 515, 516 (1941)	Cum HB4	4-4 $\frac{1}{2}$ x6	CI	Top	55	15°A			.012	.015			Diesel									
510, 511, 512, 519, 520, 521, 522, 523, 524, 552, 548, 549, 550 (1941)	Cum HB6	6-4 $\frac{1}{2}$ x6	CI	Top	55	15°A			.025	.025			Diesel									
549, 550 (1941)	Cum HB6	6-4 $\frac{1}{2}$ x6	CI	Top	55	15°A			.025	.025			Diesel									
548, 549, 550 (1941)	Cum HBS6	6-4 $\frac{1}{2}$ x6	CI	Top	55	15°A			.025	.025			Diesel									
543, 544, 545, 546, 550 (1941)	Cum AA600	6-4x5	CI	Top	55								Diesel									
529, 530, 531, 532 (1941)	Wau 6MZR	6-4 $\frac{1}{2}$ x4	AI	Top	40-1500			.008	.014				14mm	.020								
564, 565, 566, 567 (1941)	Cat D468	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	15-45			.010	.010													
LA FRANCE REPUBLIC																						
C3, D4, E4	Wau 6BK	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40	TC	TC	.010	.006-.008	.010-.012	AC	86	18mm	.025			112					
F4, H6	Wau 6MK	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40	8°A	3A	.004	.004-.006	.012-.014	AC	86	18mm	.025			80					
K1	Wau 6SRL	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40	10°A	3A	.004	.006-.008	.016-.018	AC	76	$\frac{7}{8}$	.025			80				
M4	Wau 6-125	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	CI	Top	40	42°B	15B	.010	.010-.012	.018-.020	AC	85	18mm	.025			96					
EH5B, EH5D, EH6B, EH6D	Wau 6BZ	6-4x4 $\frac{1}{2}$	AI	Top	40-1500	5°A	2A	.010	.010-.012	.014-.016	AC	86	18mm	.025			112					
FH5B, FH5D, HH7	Wau 6MZR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A	.004	.008-.010	.014-.016	AC	86	18mm	.025			96					
KH2	Wau 6SRLR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A	.004	.008-.010	.016-.018	AC	76	$\frac{7}{8}$	.025			96				
MH5	Wau 6SRKR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A	.004	.008-.010	.016-.018	AC	76	$\frac{7}{8}$	.025			96				
MARMON-HERRINGTON																						
A10-4	Her JXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{1}{2}$ A	.008	.006	.006	Ch	1 COM	$\frac{7}{8}$	.025	.020	TC	TC				
A30-4	Her WXC	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	1 COM	18mm	.025	.020	TC	TC					
A40-4, A50-4	Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	1 COM	18mm	.025	.020	TC	TC					
TH300-4	Her YXC	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	1 COM	18mm	.025	.020	TC	TC					
TH310-4	Her YXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	1 COM	18mm	.025	.020	TC	TC					
TH310A-4, TH310A-6	Her RXC	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	26-2600	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	1 COM	18mm	.025	.020	TC	TC					
TH315-4, TH315-6	Her HXB	6-5x6	AI	Top	35-1600	5°B	2B	.015	.010	.016	Ch	1 COM	18mm	.025	.020	TC	TC					
TH320-4, TH320-6	Her HXC	6-5 $\frac{1}{2}$ x6	AI	Top	35-1600	5°B	2B	.015	.010	.016	Ch	1 COM	18mm	.025	.020	TC	TC					
B10-4, C10-4, DSD100-4	Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{1}{2}$ A	.006	.006	.006	Ch	2 COM	$\frac{7}{8}$	.025	.020	TC	TC				
A20-4, B20-4, C20-4, D20-4, DSD200-6	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{1}{2}$ A	.006	.006	.006	Ch	2 COM	$\frac{7}{8}$	.025	.020	TC	TC				
B30-4, C30-4, C30-6, DSD300-4, DSD300-6	Her JXD	6-4x4 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{1}{2}$ A	.006	.006	.006	Ch	2 COM	$\frac{7}{8}$	.025	.020	TC	TC				
B40-4, B40-6, C40-4, C40-6, DSD400-4, B50-4, B50-6, C50-4, C50-6, DSD500-4, DSD500-6	Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	8 COM	18mm	.025	.020	TC	TC					
B60-4, C60-4, C65, DR4, C80-4, C80-6, DSD550, DR4, DSD600-4, DSD600-6	Her RXB	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	8 COM	18mm	.025	.020	TC	TC					
B70-4, B70-6, C70-4, DSD700-4, DSD700-6	Her RXB	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	8 COM	18mm	.025	.020	TC	TC					
B80-4, B80-6, C80-4, C80-6, DSD800-4, DSD800-6	Her RXC	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	25 Max.	2°A	$\frac{3}{4}$ A	.010	.006	.010	Ch	8 COM	18mm	.025	.020	TC	TC					
TH415-4, TH415-6, TH515-4, TH515-6	Her HXB	6-5x6	AI	Top	25 Max.	5°B	2B	.015	.010	.016	Ch	8 COM	18mm	.025	.020	TC	TC					
TH420-4, TH420-6, DSD900-4, DSD900-6	Her HXD	6-5 $\frac{1}{2}$ x6	AI	Top	25 Max.	5°B	2B	.015	.010	.016	Ch	8 COM	18mm	.025	.020	TC	TC					
B5-4x4, B6-4x4, B5-6x6, B6-6x6, B5-6x4, B6-6x4	Ford V8	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	AI	Top	40 Max.	$\frac{3}{8}$ B		Y	Y	Y	Ch	7 COM	18mm	.025	.014	TC	TC					
TH520-4, TH520-6, DSD1000-4, DSD1000-6	Her HXE	6-5 $\frac{1}{2}$ x6	AI	Top	25 Max.	5°B	2B	.015	.010	.016	Ch	8 COM	18mm	.025	.020	TC	TC					
LD1 (1937), CSA-4, CSB-4, CS-4, C6-4 (1937), C5-6, C-6 (1937)	Ford V8	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	St	Top	40 Max.			Y	Y	Y	Ch	8 COM	18mm	.025	Y	4°B	100					
LD2-4, E5-4, E5-6, E6-4, E6-6 (1938)	Ford V8	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	8 COM	14mm	.025	Y	4°B	100					
LD3-4, F5-4, F5-6, F6-6, OT2-4 (1939)	Ford 85	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	8 COM	14mm	.025	Y	4°B	100					
FF5-4, FF6-4, FF5-6, FF6-6, OOT2-4 (1939)	Ford 95	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	CA	Top	30-2000	TC	TC	Y	Y	Y	Ch	8 COM	14mm	.025	Y	4°B	100					
H5-4, H6-4, H5-6, H6-6, LD4-4, OT3-4 (1940)	Ford 85	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	Y	4°B	100					
HH5-4, HH6-4, HH5-6, HH6-6, LLD4-4, OOT3-4 (1940)	Ford 95	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	Y	4°B	100					
J5-4, J6-4, J5-6, J6-6, LD5-4, OT4-4 (1941)	Ford 85	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	Y	4°B	100					
JJ5-4, JJ6-4, JJ5-6, JJ6-6, LLD5-4, OOT4-4 (1941)	Ford 95	8-3 $\frac{1}{2}$ x3 $\frac{3}{4}$	St	Top	30-2000	TC	TC	Y	Y	Y	Ch	H10	14mm	.025	Y	4°B	100					
OSHKOSH																						
WLX	Her WXC2	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.006	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		95				
JCB	Her JXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.008	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		115				
JD	Her JXD	6-4x4 $\frac{1}{2}$	AI	Top	26-2600	5°A		.008	.008	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		115				
FD, FB-35, FB, W700	Her RXC	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	26-2600	2°A		.006	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		95				
B35, B3D, WLD, W300	Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.006	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		95				
C35, C3D, W400	Her YXC2	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-2600	2°A		.006	.006	.010	Ch	1 COM	$\frac{7}{8}$	.025	.020		95				
FC-35, R35, FS, FC, W500, W600	Her RXB	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	26-2600																	

ENGINE SERVICE SPECIFICATIONS—Continued

(Key to Abbreviations on pages 34 and 35)

Wheel Teeth B-Before A-After	Comp. Pressure at Cranking Speed	TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tapet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG				Breaker Point Gap	Spark Occurs °C B-Before A-After	Spark Occurs Fly- Wheel Teeth °C B-Before A-After	Comp. Pressure at Cranking Speed
								°TC	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size	Gap				
REO—Continued																				
4H5, 4J5, 4K5, 3L6H (1938)		Bud K428	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Bot	30-	TC	TC		.012	.006	.006	Ch	C7	18mm	.025	.020	10°B	1B	70
19 (1940)		Ownc GC228	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Bot	40-	5°B	2B		.012	.008	.010	Ch	H10	14mm	.032	.018	8°B	3B	105
20, 21 (1940)		Ownc GC245	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Bot	40-	5°B	2B		.012	.008	.010	Ch	H10	14mm	.032	.018	8°B	3B	105
22 (1940)		Ownc GC288	6-3 $\frac{1}{2}$ x5	AI	Bot	40-	5°B	2B		.012	.008	.010	Ch	H10	14mm	.032	.018	8°B	3 $\frac{1}{2}$ B	105
23 (1940)		Ownc GC310	6-3 $\frac{1}{2}$ x5	AI	Top	40-	5°B	2B		.012	.008	.010	Ch	H10	14mm	.032	.018	8°B	3 $\frac{1}{2}$ B	105
4D19 (1941)		Bud 40T226	4-3 $\frac{1}{2}$ x5	AI	Top	30-40	20°B			.009	.012									
6D19 (1941)		Bud 6DT294	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	30-40	20°B			.009	.012									
D20 (1941)		Bud 6DT317	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	30-40	20°B			.009	.012									
STERLING																				
FB50 Del, FB60 Del, FB70 Del, FC90, FB70, FBT130		Wau 6BK	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1500	TC	TC		.010	.010-.012	.004-.016	AC	86	18mm	.025				112
FB80, FD90		Wau 6MK	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A		.004	.008-.010	.014-.016	AC	86	18mm	.025				80
FC100, FD97		Wau 6SRL	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-	10°A	3A		.004	.008-.008	.016-.018	AC	78	3 $\frac{1}{2}$	.025				80
FDS180, FC135, FD115		Wau 6-125	8-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	CI	Top	40-	42°B	15B		.010	.010-.012	.018-.020	AC	85	18mm	.025				96
FBT152		Wau 6MZ	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-	8°A	3A		.004	.008-.010	.014-.016	AC	86	18mm	.025				97
FBT152		Wau 6-110	6-4x4 $\frac{1}{2}$	AI	Top	40-	15°B	5B		.010	.010-.012	.014-.016	AC	86	18mm	.025				80
HC185, HC200, HC250, HC170, HCS210		Wau 6BR	6-5x5 $\frac{1}{2}$	CI	Top	40-	10°A	4A		.008	.006-.008	.010-.012	AC	76	3 $\frac{1}{2}$	.025				76
MB75, MD75, MS75, MD85, MB85		Wau 6BZ	6-4x4 $\frac{1}{2}$	AI	Top	40-1500	5°A	2A		.010	.010-.012	.014-.016	AC	86	18mm	.025				112
MB90, MD90		Wau 6MKR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A		.004	.008-.010	.014-.016	AC	86	18mm	.025				90
JB90, JD90, HD105, HC105, HBT128, HWS128, HDS128		Wau 6MZR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1500	5°A	3A		.004	.008-.010	.014-.016	AC	86	18mm	.025				90
HD110, HD115, HC115		Wau 6SRLR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A		.004	.008-.010	.016-.018	AC	86	3 $\frac{1}{2}$	.025				96
JAD135, JD137, HD145, HD165, JC137, JC145, HC145, HC147, HC156, HC165, HC175, JDS160, JWS160, HWS235S, HDS235S, HCS225		Wau 6SRKR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1500	8°A	3A		.004	.008-.010	.016-.018	AC	76	3 $\frac{1}{2}$	.025				96
HC185, HC200, HC250, HC255, HCS285, HCS300		Wau 6BRB	6-5x5 $\frac{1}{2}$	AI	Top	40-1500	10°A	4A		.008	.006-.008	.010-.012	AC	76	3 $\frac{1}{2}$	.025				90
STEWART																				
40A (1938)		Con F4162	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2800				.010	.010	.014	Ch	7 COM	18mm	.025	.025	TC	TC	105
60A (1938)		Con F6170	6-3x4	CI	Top	40-2800	2°B	3B		.010	.010	.014	Ch	7 COM	18mm	.025	.025			
61A (1938)		Con F6218	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2800	2°B	3B		.012	.012	.018	Ch	7 COM	18mm	.025	.025			97
45A, 45AS (1938)		Wau 6ZKA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2800	8°A	2A		.010	.010	.016	Ch	7 COM	18mm	.025	.025			111
47A, 50A, 50AS (1938)		Wau 6BM	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-2800	TC	TC		.010	.010	.016	Ch	7 COM	18mm	.025	.025			112
49A (1938)		Wau 6BK	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	45-2800	TC	TC		.010	.010	.016	Ch	7 COM	18mm	.025	.025			102
51A (1938)		Con E602	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	45-2800	TC	TC		.017	.017	.017	Ch	7 COM	18mm	.025	.025	TC	TC	90
58A (1938)		Wau 6MZ	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-2800	8°A	3A		.010	.012	.018	Ch	7 COM	18mm	.025	.025			111
38-6, 31X (1938)		Wau 6SRK	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	45-2200	10°A	3A		.010	.012	.018	Ch	2 COM	3 $\frac{1}{2}$	.025	.025			112
45GL (1938)		Wau 6BL	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-2800	TC	TC		.010	.010	.016	Ch	7 COM	18mm	.025	.025			90
49A (1941)		Wau 6BZ	6-4x4 $\frac{1}{2}$	AI	Top	40-2800	TC	TC		.010	.010	.016	Ch	7 COM	18mm	.025	.025			112
58A, 59A (1941)		Wau 6MZR	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-2800	8°A	3A		.010	.012	.018	Ch	7 COM	18mm	.025	.025			90
38A (1941)		Wau 6SRKR	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-2800	10°A	3A		.010	.012	.018	Ch	7 COM	18mm	.025	.025			80
STUDEBAKER																				
T2, T4, T6, T8		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	20 Min.	5°A	1 $\frac{1}{2}$ A		.010	.006	.010	Ch	7	18mm	.025	.020	1°B	1B	70
2T2, 2M2, 2TB2 (1936)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	20 Min.	5°B			.020	.016	.016	Ch	8	18mm	.025	D 2°B			80
2W6, 2M6, 2MB6 (1936)		Wau 6BM	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	20 Min.	TC	TC		.010	.012	.014	Ch	7	18mm	.025	D TC			101
2W7 (1936)		Wau 6BK	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	20 Min.	TC	TC		.010	.012	.014	Ch	7	18mm	.025	D TC			101
W8, 2W8 (1936)		Wau 6-110	6-4x4 $\frac{1}{2}$	AI	Top	20 Min.	15°B			.010	.012	.016	Ch	6M	18mm	.025	D 3°B			80
J5 (1937)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40 Min.	5°B	1 $\frac{1}{2}$ B		.020	.016C	.016C	Ch	8	18mm	.025	.020 2°B			101
J15, J15M, J15B (1937)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	20 Min.	5°B	1 $\frac{1}{2}$ B		.020	.016C	.016C	Ch	7B	18mm	.025	.020 2°B			101
J20, J20M, J20B (1937)		Her JXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	35 Min.	2°A	1 $\frac{1}{2}$ A		.010	.008 H	.010 H	Ch	2 COM	3 $\frac{1}{2}$	.025	.020 TC			96
J25, J25M, J25B (1937)		Her JXD	6-4x4 $\frac{1}{2}$	AI	Top	35 Min.	2°A	1 $\frac{1}{2}$ A		.010	.006	.006	Ch	1 COM	3 $\frac{1}{2}$	.025	.020 TC			95
K30, K30M, J30, J30M (1937-38)		Her WXC3	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	35 Min.	2°A	1 $\frac{1}{2}$ A		.010	.006	.006	Ch	1 COM	3 $\frac{1}{2}$	.025	.020 TC			90
K5 (1938)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40 Min.	15°B	5 $\frac{1}{2}$ B		.020	.016C	.016C	Ch	8A	18mm	.025	D 2°B			95
K10 (1938-40)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40 Min.	2 $\frac{1}{2}$ B	1B		.020	.016C	.016C	Ch	8A	18mm	.025	D 2°B			95
K15, K15B, K15M (1938-40)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40 Min.	15°B	5 $\frac{1}{2}$ B		.020	.016C	.016C	Ch	8A	18mm	.025	D 2°B			95
K20, K20M, K20MB (1938-40)		Her HXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	35 Min.	2°A	1 $\frac{1}{2}$ A		.010	.006	.006	Ch	7	18mm	.025	D TC			95
K25, K25M, K25MB (1938-40)		Her JXD	6-4 $\frac{1}{2}$	AI	Top	35 Min.	5°A	1 $\frac{1}{2}$ A		.010	.006	.006	Ch	7	18mm	.025	D TC			95
Coupe Express (1941)		Ownc	6-3x4	AI	Top	40 Min.	15°B			.020	.016	.016	Ch	8	14mm	.025	D 2°B			105
Standard (1941)		Ownc	6-3x4	AI	Top	40 Min.	15°B			.020	.016	.016	Ch	8	14mm	.025	D 2°B			105
Heavy Duty (1941)		Ownc	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40 Min.	15°B			.020	.016	.016	Ch	8A	18mm	.025	D 2°B			105
WALTER																				
FND		Wau 6MK	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1500	8°A	3A		.010	.010	.014	AC		14mm	.025	.020 25°A			
FMD		Wau 6SRL	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	50-1500	10°A	3A		.010	.010	.018	AC		14mm	.025	.020 25°A			
FKMD, FCKD, FCS		Wau 6SRK	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	50-1500	10°A	3A		.010	.010	.018	AC		14mm	.025	.020 25°A			
FBS, FBRS		Wau 6BR	6-5x5 $\frac{1}{2}$	AI	Top	40-1500	10°A	4A		.010	.010	.015	AC		14mm	.025				

ENGINE SERVICE SPECIFICATIONS—Continued

(Key to Abbreviations on pages 34 and 35)

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG				Breaker Point Gap	Spark Occurs °TC B-Before A-After	Spark Occurs Fly- wheel Teeth B-Before A-After	Comp. Pressure at Cranking Speed
						°TC	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size	Gap				
WHITE—Continued WA22, WA26, WA34, WA122, WA126, WA134, WA2264 (1941)	Own 140A	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	Al	Top	35 Max.	15°B		0	0	0	Ch	JC10	14mm	.025	.018	7°B		112
WILLYS 38, 48, 440P	Own	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CS	Top	30-30	TC	TC	.010	.004	.006	Ch	C7	18mm	.025	.020	5°A	1 $\frac{1}{2}$ A	87
440	Own	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	75-30	9°B	2 $\frac{1}{2}$ B	.020	.014	.020	Ch	J8	18mm	.030	.020	TC	TC	107
441, 441P	Own	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Al	Top	75-30	9°B	2 $\frac{1}{2}$ B	.020	.014	.020	Ch	J9	18mm	.030	.020	TC	TC	107
Engines																		
BUDA																		
	HP205	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			87
	HP217	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			94
	HP280	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			87
	HP298	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			87
	HP326	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			103
	HP351	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			103
	K369	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	SS	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			87
	K393	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	CI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			89
	K428	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1400	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			102
	L525	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	CI	Top	40-1600	TC	TC	.006	.006	.009	AC	87	18mm	.025	.018			87
	LO525	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1600	10°B		.009	.009	.018	AC	K7	18mm	.025	.018			91
	GF638	6-4 $\frac{1}{2}$ x6	CI	Top	35-1400	5°B		.010	.010	.016	AC	87	18mm	.025	.018			87
	M766	6-5x6 $\frac{1}{2}$	AI	Top	35-1200	10°B		.015	.010	.016	AC	87	18mm	.025	.018			93
	4DT212	4-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1600	20°B		.009	.009	.012		Die sel						380
	4DT226	4-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1600	TC	TC	.009	.009	.012		Die sel						380
	6DT278	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1600	20°B		.009	.009	.012		Die sel						
	6DT294	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	40-1600	20°B		.009	.009	.012		Die sel						600
	6DT317	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	40-1600	12°B		.009	.009	.012		Die sel						
	6DT389	6-3 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	35-1600	12°B		.009	.009	.012		Die sel						
	6DT468	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	35-1600	12°B		.009	.009	.012		Die sel						
	6DH691	6-4 $\frac{1}{2}$ x6 $\frac{1}{2}$	AI	Top	35-1600	15°B		.015	.009	.012		Die sel						
CONTINENTAL																		
	C400	4-3 $\frac{1}{2}$ x4	Tp	Top	35-2500			.012	.010C	.010C			18mm					100
	F6170	6-3x4	Tp	Top	30-2000			.014	.014C	.014C			18mm					
	F6199	6-3 $\frac{1}{2}$ x4	Tp	Top	30-2000			.014	.014C	.014C			18mm					
	F6209	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	30-2000			.014	.014C	.014C			18mm					85
	F6218	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	30-2000			.014	.014C	.014C			18mm					97
	A6244	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	30-2000			.014	.014C	.014C			18mm					114
	20C	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	50-2500			.014	.014C	.014C			18mm					83
	E800	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	35 Max.			.012	.008H	.010H			7 $\frac{1}{2}$					102
	E801	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	40-2600			.018	.018C	.022C			18mm					97
	E802	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	40-2600			.018	.018C	.022C			18mm					102
	E803	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	40-2600			.018	.018C	.022C			18mm					99
	20R	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	30-2300			.014	.013C	.018C			18mm					80
	21R	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	30-2300			.014	.013C	.018C			18mm					75
	22R	6-4 $\frac{1}{2}$ x5 $\frac{1}{2}$	AI	Top	30-2300			.014	.013C	.018C			18mm					78
	Y4089	4-2 $\frac{1}{2}$ x3 $\frac{1}{2}$	CI	Top	35-40			.012	.012C	.012C			18mm					105
	Y4091	4-2 $\frac{1}{2}$ x3 $\frac{1}{2}$	CI	Top	35-40			.012	.012C	.012C			18mm					105
	F4124	4-3x4 $\frac{1}{2}$	Tp	Top	35-40			.014	.014C	.014C			18mm					105
	F4140	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	35-40			.014	.014C	.014C			18mm					105
	F4162	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	35-40			.014	.014C	.014C			18mm					109
	M6271	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	55-1200			.0175	.017C	.022C			18mm					99
	M6290	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	55-1200			.0175	.017C	.022C			18mm					101
	M6330	6-4x4 $\frac{1}{2}$	Tp	Top	55-1200			.0175	.017C	.022C			18mm					
	M6253	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Tp	Top	55-1200			.0175	.017C	.022C			18mm					120
	B6371	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	13-300			.022	.017C	.025C			18mm					123
	B6405	6-4 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	13-300			.022	.017C	.025C			18mm					124
HERCULES																		
	ZXA	4-2 $\frac{1}{2}$ x3	CI	Top	15-1000	5°A	Var	.006	.006	.008			14mm	.025	.020	TC	TC	Opt
	ZXB	4-2 $\frac{1}{2}$ x3	CI	Top	15-1000	5°A	Var	.006	.006	.008			14mm	.025	.020	TC	TC	Opt
	IX	4-2 $\frac{1}{2}$ x4	CI	Top	15-1000	5°A	Var	.006	.006	.008			18mm	.025	.020	TC	TC	Opt
	IXF	4-2 $\frac{1}{2}$ x4	CI	Top	15-1000	5°A	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	IXA	4-3x4	Var	Top	15-1000	5°A	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	IXK	4-3 $\frac{1}{2}$ x4	CI	Top	15-1000	5°A	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	IXB	4-3 $\frac{1}{2}$ x4	Var	Top	15-1000	5°A	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OOA	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	15-1000	5°A	Var	.008	.008	.012			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OOB	4-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	15-1000	5°A	Var	.008	.008	.012			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OOC	4-4x4 $\frac{1}{2}$	Var	Top	15-1000	5°A	Var	.008	.008	.012			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	26-1600	5°B	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OXB	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	26-1600	5°B	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OXC	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	26-1600	5°B	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	OXD	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-1600	5°B	Var	.006	.006	.008			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	JXA	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	Var	Top	26-1600	5°A	Var	.008	.008	.010			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	JXF	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-1600	5°A	Var	.008	.008	.010			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	JXG	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-1600	5°A	Var	.008	.008	.010			7 $\frac{1}{2}$	.025	.020	TC	TC	Opt
	JXE3	6-3 $\frac{1}{2}$ x4 $\frac{1}{2}$	AI	Top	26-1600	5°A	Var	.008	.008	.010</								

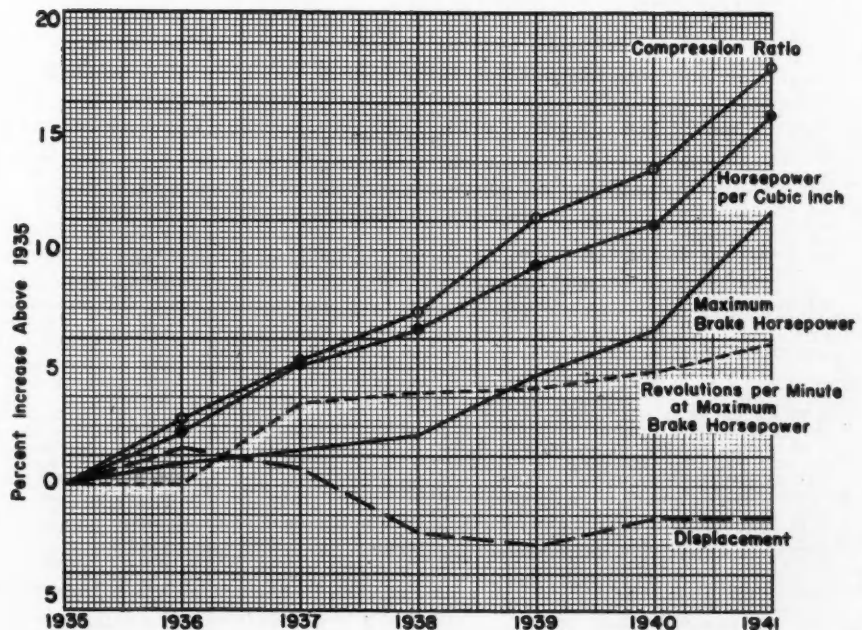
ENGINE SERVICE SPECIFICATIONS-Continued

(Key to Abbreviations on pages 34 and 35)

TRUCK MAKE AND MODEL	Engine Make and Model	Number of Cylinders, Bore and Stroke	Piston Material	Connecting Rods Removed From	Normal Oil Pressure Lb. at M.P.H. or R.P.M.	Intake Valve Opens B-Before A-After		Intake Tappet Clearance for Valve Timing	OPERATING TAPPET CLEARANCE (Hot unless noted)		SPARK PLUG			Breaker Point Gap	Spark Occurs °TC B-After	Spark Occurs Fly- Wheel Teeth °TC B-After	Comp. Pressure at Cranking Speed
						°TC	Flywheel Teeth TC		Intake	Exhaust	Make	Type	Size				
HERCULES—Continued																	
	DJXB	6-3½x4½	Al	Top	45-2000	12°B	Var	.010	.010	.010		Die	sel				475
	DJXC	6-3½x4½	Al	Top	45-2000	12°B	Var	.010	.010	.010		Die	sel				475
	DRXB	6-4½x5½	Al	Top	30-1200	12°B	Var	.010	.010	.016		Die	sel				475
	DRXC	6-4½x5½	Al	Top	30-1200	12°B	Var	.010	.010	.016		Die	sel				475
	DHXB	6-5x6	Al	Top	30-1200	5°B	Var	.010	.010	.016		Die	sel				475
	DFXB	6-5x6	Al	Top	40-1200	5°B	Var	.010	.010	.016							475
	DHXC	6-5½x6	Al	Top	30-1200	5°B	Var	.010	.010	.016		Die	sel				475
	DFXC	6-5½x6	Al	Top	40-1200	5°B	Var	.010	.010	.016		Die	sel				475
	DFXD	6-5½x6	Al	Top	40-1200	5°B	Var	.010	.010	.016		Die	sel				475
LYCOMING																	
(1933)	SC	6-3½x4½	CI	Bot	40 Max.	5°A	1½A	.010	.006-.008	.010-.012							
(1929-34)	TS	6-3½x5	CI	Top	40 Max.	5°A	1½A	.010	.006-.008	.010-.012				7/8	.025	.018	
(1933) on.	AEF	6-3½x4½	CI	Top	40 Max.	5°B	1½B	.012	.008-.010	.010-.012				18mm	.025	.018	
(1930-33)	ASB	6-3½x4½	CI	Top	40 Max.	5°A	1½A	.012	.008-.010	.010-.012				18mm	.025	.018	
(1930-33)	ASD	6-3½x4½	CI	Top	40 Max.	5°A	1½A	.012	.008-.010	.010-.012				18mm	.025	.018	
(1934) on.	ASE	6-3½x4½	Al	Bot	40 Max.	5°A	1½A	.012	.008-.010	.010-.016				18mm	.025	.018	
(1930) on.	AFF	4-3½x4½	CI	Bot	40 Max.	TC	TC	.008	.006-.008	.008-.008				7/8	.025	.018	
(1934) on.	GF	8-3½x4½	Al	Bot	40 Max.	7½°B	2½B	.012	.008-.010	.008-.010				18mm	.025	.018	
(1934) on.	WFC	6-3½x4½	Al	Bot	40 Max.	7½°B	2½B	.012	.008-.010	.008-.010				14mm	.025	.018	
(1938) on.	DC	4-3½x3½	Al	Bot	35 Max.	7°B		.012	.010-.012	.010-.012				18mm	.025	.018	
WAUKESHA																	
	6BK	6-3½x4½	CI	Top	40-1500	TC	TC	.010	.010-12C	.014-16C				18mm	.025	.018	
	6MS	6-3½x4½	CI	Top	40-1500	8°A		.014	.003-12C	.012-14C				18mm	.025	.018	
	6ML	6-4x4½	CI	Top	40-1500	8°A	3A	.004	.008-10C	.014-16C				18mm	.025	.018	
	6MK	6-4½x4½	CI	Top	40-1500	8°A	3A	.004	.008-10C	.014-16C				18mm	.025	.018	
	6MZ	6-4½x4½	CI	Top	40-1500	8°A	3A	.004	.008-10C	.014-16C				18mm	.025	.018	
	6SRL	6-4½x5½	CI	Top	40-1500	10°A	3A	.004	.008-10C	.016-18C				7/8	.025	.018	
	6SRK	6-4½x5½	Var	Top	40-1500	10°A	3A	.004	.008-10C	.016-18C				7/8	.025	.019	
	6AB	6-4½x5½	CI	Top	40-1500	10°A		.008	.004-06C	.008-10C				7/8	.025	.018	
	6RB	6-5x5½	Al	Top	40-1500	10°A	4A	.008	.008-08C	.010-12C				7/8	.025	.018	
	6BL	6-3½x4½	Al	Top	40-1500	TC		.010	.010-12C	.014-16C				18mm	.025	.018	
	6-90	6-3½x4½	Al	Top	40-1500	5°B		.010	.010-12C	.014-16C					.025	.018	
	6-110	6-4x4½	Al	Top	40-1500	15°B	5B	.009	.010-12C	.014-16C				18mm	.025	.018	
	6-125	6-4½x5½	Al	Top	40-1500	42°B	15B	.008	.010-12C	.018-20C				18mm	.025	.018	
	6SRS	6-4½x5½	CI	Top	40-1500	10°A		.004	.008-10C	.016-18C				7/8	.025	.018	
	6BA	6-3½x4½	CI	Top	40-1500	TC	TC	.010	.010-12C	.012-14C				18mm	.025	.018	
	6BM	6-3½x4½	CI	Top	40-1500	TC	TC	.010	.010-12C	.014-16C				18mm	.025	.018	
	6ZKA	6-3½x4½	CI	Top	40-1500	8°A	2A	.004	.008-10C	.012-14C				18mm	.025	.018	
	6GAL	6-5x5½	CI	Top	40-1500	TC	TC	.008	.015-17C	.024-26C				18mm	.025	.018	
	6GAK	6-5½x5½	CI	Top	40-1500	TC	TC	.008	.015-17C	.024-26C				18mm	.025	.018	
	6BKH	6-3½x4½	Al	Top	40-1500	5°A	2A	.006	.010-12C	.018-20C				18mm	.025	.018	
	6BZ	6-4x4½	Al	Top	40-1500	5°A	1½A	.010	.010-12C	.014-16C				18mm	.025	.010	
	6WAL	6-5½x6½	Al	Top	40-1500	TC	TC		.018-20C	.025-27C				18mm	.025	.018	
	6WAK	6-5½x6½	Al	Top	40-1500	TC	TC		.018-20C	.025-27C				18mm	.025	.018	
	6WALH	6-5½x6½	Al	Top	40-1500	TC	TC		.018-20C	.025-27C				18mm	.025	.018	
	6WAKH	6-5½x6½	Al	Top	40-1500	TC	TC		.018-20C	.025-27C				18mm	.025	.018	
	6MKR	6-4½x4½	Al	Top	40-1500	8°A	3A	.004	.008-.010	.014-.016				18mm	.025	.018	
	6MZR	6-4½x4½	CI	Top	40-1500	8°A	3A	.004	.008-.010	.014-.016				18mm	.025	.018	
	6SRLR	6-4½x5½	CI	Top	40-1500	8°A	3A	.004	.008-.010	.014-.016				18mm	.025	.018	
	6SRKR	6-4½x5½	Var	Top	40-1500	8°A	3A	.004	.008-.010	.014-.016				18mm	.025	.018	
	6RBR	6-5x5½	Al	Top	40-1500	10°A	4A	.008	.006-.008	.010-.012				18mm	.025	.018	
	130HS, 130GS	4-3½x5	CI	Top	40-1500	5°A		.012	.009-11C	.014-16C				18mm	.025	.018	
	130HL, 130GL	4-4x5	CI	Top	40-1500	5°A		.012	.009-11C	.014-16C				18mm	.025	.018	
	140HS, 140GS	6-4½x5½	Al	Top	40-1500	5°A		.010						18mm	.025	.018	
	140HK, 140GK	6-4½x5½	Al	Top	40-1500	5°A		.010						18mm	.025	.018	
	145HS, 145GS	6-4½x6	Al	Top	40-1500	5°A		.006	.009-11C	.024-26C				18mm	.025	.018	
	145HK, 145GK	6-5½x6	Al	Top	40-1500	5°A		.006	.009-11C	.024-26C				18mm	.025	.018	

TREND OF AMERICAN TRUCK AND BUS ENGINES-1935-1941

This chart, which shows the trend towards higher compression ratio, more horsepower per cubic inch, more total brake horsepower, more revolutions per minute and less piston displacement has been prepared by the Ethyl Gasoline Corp. The data from which the chart was prepared are the average of values listed by the manufacturers of engines in trade publications from 1935 to 1941.



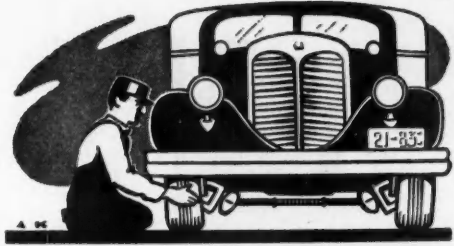
FRONT END ALIGNMENT

N—Negative

TRUCK MAKES AND MODELS	TOE-IN (in inches unless otherwise shown)	CAMBER (in degrees)	CASTER (in degrees)	KING PIN SLANT (in degrees)	TRUCK MAKES AND MODELS	TOE-IN (in inches unless otherwise shown)	CAMBER (in degrees)	CASTER (in degrees)	KING PIN SLANT (in degrees)
AUTOCAR					DIAMOND T				
RG, RH, RHT, 6RH, UT, UNF, UTT, UNFT (1935-36)	0-1/4	1	2 1/2	8	210, 211, 226	1/8	1	1 1/2	9
D, 9T, 6D, UDT, 6UDF, RHD (1935-36)	0-1/4	1	1 1/2	8	241, 261	1/8	2	2 1/2	9
DF, DFT, 6DF, DH, S (1935-36)	0-1/4	1	1	8	311, 326B, 325DR, 351, 376	1/8	2	2 1/2	7 1/2
N (1935-36)	0-1/4	1	1 1/2	8	410A	1/8	2	3	7 1/2
NT, DP (1935-36)	0-1/4	1	1 1/2	8	425, 510, 525, 603A, 801A, 740, 750	1/8	2	3	0
NF, 6N (1935-36)	0-1/4	1	1 1/2	8	1515, 1201, 1203, 1602A, 1603, 2501	1/8	2	4 1/2	0
NFT (1935-36)	0-1/4	1	1 1/2	8	243, 311C, 312, 351C, 352 (1935)	1/8	2	2 1/2	7 1/2
T, 6T, UDFT, UNT, 6NF (1935); 6NF (1936)	0-1/4	1	1 1/2	8	412B, 412DR, 512B, 512DR (1935)	1/8	1	2 1/2	7 1/2
TT, UDP (1935); T, 6T, UDFT, UNT, TT, UDF (1936)	0-1/4	1	2	8	211A, 220, 227 (1935); 212A, 212B, 221, 220 (1936-37)	1/8	1	1 1/2	9
UDF (1935-36)	0-1/4	1	1 1/2-2 1/4	8	244, 313, 320, 353, 360 (1936-37)	1/8	2	1 1/2	8
UN (1935-36)	0-1/4	1	3 1/4	8	412B, 412DR, 512B, 512DR (1936-37)	1/8	1	2 1/2	9
UNFT, 6UN (1935-36)	0-1/4	1	2 1/2	8	80 (1936-37)	1/8	1	3 1/2	9
6UT (1935-36)	0-1/4	1	N	8	80, 301, 304 (1938); 201, 305, 306, 306SC (1939-41)	1/8	1	4 1/2	9
C (1935-36)	0-1/4	1	0	8	404SC, 609SC, 612SC, 614SC, 404, 405, 406, 513, 615	1/8	1	1 1/2	9
UD, 6UD, US, UNF (1936)	0-1/4	1	2 1/4	8	(1938-40-41)	1/8	1	1 1/2	9
TF, 6TF (1936)	0-1/4	1	N	8	509, 611, 612, 613, 614, 513, 401, 402, 507, 607, 609, 508,	1/8	1	1 1/2	8 1/2
TFT (1936)	0-1/4	1	1-1N	8	610, 404C, 509C, 513C, 612C, 614C (1938-41)	1/8	1	1 1/2	8 1/2
6X2RL (1937)	0-1/4	1	2 1/4	8	412DR, 512B, 512DR, 805H, 805W, 805B, 806BW,	1/8	1	2 1/2	8
RM, RL, RLD (1937); A, 6X2RL (1938)	0-1/4	1	2-2 1/2	8	805DR, 805DRW, 806H, 806W, 807W, 808W, 900W	1/8	1	2 1/2	8
D, 2TR, 3TR, 4TR, 6X2DF (1937); D, 3TR (1938)	0-1/4	1	2-2 1/4	8	(1938-40)	1/8	1	2 1/2	8
RMT, 1TR (1937); 1UTR, 2UTR, 3UTR (1937-38); 4TR,	0-1/4	1	2-2 1/4	8	802, 803, 804, 803C, 804C, 615C, 803C, 804C (1938-41)	1/8	1	1 1/2	8
RLD, 6X4DF (1938)	0-1/4	1	2	8	201C, 305C, 306C (1940-41)	1/8	1	1	9
DF, DP (1937-38)	0-1/4	1	1 1/2-2	8	DODGE				
UD (1937); RMT, 1TR, UD, 6X2UD (1938)	0-1/4	1	1 1/2-2	8	KC, KCL (1935)	1/8	1	2	1 1/2
6TR (1937)	0-1/4	1	1 1/2-2	8	KH31A, KH32A, KH33A, K32A, K33A, K34A (1935)	1/8	2	1 1/2	
6X2UD (1937); 4UTR (1937-38); DH (1938)	0-1/4	1	1 1/2-1 3/4	8	LE-30, LE-31, LE-32, FD3-29, FD3-35, FD3-62, LF-35,	1/8	2	1 1/2	7
N (1937-38)	0-1/4	1	1 1/2-1 3/4	8	LF-36, LF-37, FD4-29, FD4-36, FD4-62, LF-38,	1/8	2	1 1/2	7
DH (1937); NF, 5UTR (1937-38)	0-1/4	1	1 1/2-1 3/4	8	LF-39, FDD4-62, FDD4-85 (1936)	1/8	2	1 1/2	7
T (1937)	0-1/4	1	1 1/2-1	8	K45A, K46A, K47A, K48A (1935)	1/8	2	1 1/2	7
6X2T (1937-38); 6X4TO (1938)	0-1/4	1	1 1/2-1	8	LH-45, LH-46, LH-47, LH-48, FD6-36, FD6-51, FD6-12,	1/8	2	1 1/2	7
6X2NF (1937)	0-1/4	1	1 1/2-1 3/4	8	FD6-60 (1936)	1/8	2	1 1/2	7
CP (1937)	0-1/4	1	1 1/2-1	8	K52 Special (1935)	1/8	2	3 1/2	9
S, 6X2UT (1937)	0-1/4	1	0-1 1/4	8	K60A, K61A, K62A (1935); LM-70, LM-71, LK-60,	1/8	1	2	8
6X2UNF (1937)	0-1/4	1	N 1/4-1 1/4	8	LK-61, LK-62, LK-63 (1936); ML, MK (1937)	1/8	1	2	8
UNF, UDP, US (1937); C, 6X4TC (1938)	0-1/4	1	0	8	RL, RK (1938); TL, TK, TLD, TKD (1939)	1/8	1	2	8
UN, UT (1937-38); UNF, UDP, 6X2UN, 6X2UNF,	0-1/4	1	0	8	VL, VK, VLD, VKD, WL, WK, WLD, WKD (1940-41)	1/8	1	2	9
6X2UT (1938)	0-1/4	1	N 1/4-0	8	LC, FDI-18	1/8	1	2	9
UDF, 6X2UN (1937); UDF, US, 6X4TD, 6X4UTO,	0-1/4	1	N 1/4	8	MC, FE1-16, PT-50, MD, FE2 (1937); RC, RD (1938);	1/8	1 1/2	2	4
6X4UTO (1938)	0-1/4	1	N 1/4	8	TC, TD-15, TD-20, TD-21 (1939); VC, VD, WC, WD	1/8	2	1 1/2	7
B, RM, RL, 2TR (1938)	0-1/4	1	2-2 1/2	8	ME, FE3, MF, FE4 (1937); RE, RF (1938); TE, TF,	1/8	2	1 1/2	7
5TR, 6X2DF (1938)	0-1/4	1	1 1/2-2 1/2	8	TG, TH (1939); VF (1940); WF (1941)	1/8	2	2	7
UA (1938)	0-1/4	1	1 1/2-2 1/2	8	MG, MH, FE6 (1937); RG, RH (1938); VM, VG, VH	1/8	2	2	7
UB (1938)	0-1/4	1	1 1/2-2 1/2	8	(1940); WFM, WG, WH, WGM, WHM (1941)	1/8	2	2 1/2	8
T, 6X2NF (1938)	0-1/4	1	1 1/2-1 3/4	8	FEDERAL				
A, B, RL, RB (1939); C10, C20, C30, C40 (1940-41)	0-1/4	1	1 1/2-1 3/4	8	X8, X8R (1930-36)	1/8	1	2 1/2	0
RLS, DF, 6X4DF, URB, URL, URLS (1939)	0-1/4	1	N 1/4-1 1/4	8	E4B (1933)	1/8	2	3 1/2	0
N, AF, T, 4TR, 5TR, 6X2NF, 6X2T, UA, UB, 1UTR,	0-1/4	1	N 1/2-1	8	A7, A8, 30, 36, 37, 40 (1931-35)	1/8	2	3	7 1/2
2UTR, 3UTR, 6X2UD (1939)	0-1/4	1	N 1/2-1	8	15A, 15B, 15X, 20A, 20B, 20C, 21, 22 (1933-34)	1/8	1	1 1/2	7 1/2
D, RFT, 1TR, 2TR, 3TR, RLD, 6X2DF (1939); C10T,	0-1/4	1	0-1 1/2	8	25A, 25B (1933-34)	1/8	1	1 1/2	7 1/2
C20T, C30T, C40T, C40D, C406A, C50D, C50T, C80,	0-1/4	1	N 1/2-1 1/2	8	C7, C7W, C8, C8W (1934-36)	1/8	1	2 1/2	8
C7062, C7064, C70, U4062 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	15D, 18D, 20D, 25D (1935)	1/8	1	1 1/2	7 1/2
DP, DH, UD (1939); U60, C70D, U7064 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	T10B, T10W (1937)	1/8	1	3	9 1/2
S, C (1939); C80D, C90D (1940-41)	0-1/4	1	N 1/2-1 1/2	8	X8, X8R (1937)	1/8	1	2 1/2	0
6X2RL (1939); C4062 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	10E, 9, 9E, 11, 11E, 15D, 18D, 20D, 25D, 28D, 29D, 40E,	1/8	1	3	8
6X4TO (1939)	0-1/4	1	N 1/2-1 1/2	8	50E, 50H, C7, C8, C7W, C8W (1936-38)	1/8	1	3 1/2	8
6X4TC (1939); C8064, C9064, DU100T (1940-41)	0-1/4	1	N 1/2-1 1/2	8	11, 11K, 12, 12K, 14, 14K, 15, 15K, 18, 18K, 20, 20K,	1/8	1	3	8
6X4TD, UDF, UN, UNF, 6X2UN, 6X2UNF (1939);	0-1/4	1	N 1/2-1 1/2	8	25, 25K, 29, 29K, 35, 40F, 45, 50F, 55, 62, 63, 65, 66,	1/8	1	3	8
U80D, U8062 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	75, 75K, 80, 80K, 85, 85K, 89, 89K, 90, 92, 94	1/8	1	3 1/2	8
UT, 4UTR, 5UTR, 6X2UT (1939); U90, U90T, U9062	0-1/4	1	N 1-0	8	FORD				
(1940-41)	0-1/4	1	N 1/2-1 1/2	8	A Commercial Car (1928-31)	1/8	2-1/4	6 1/2-3 1/2	7
UDP, 6X4UTO (1939); U60D, U8064 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	AA Truck (1928-31)	1/8	2-1/4	5-3	7
US, 6X4UTD (1939); U70, U80, U80D, U8062, U90D,	0-1/4	1	N 1/2-1 1/2	8	B (4 and 8 cyl.) Commercial Car (1932)	1/8	2-1/4	9-4 1/2	7
U9064 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	BB (4 abd 8 cyl.) Truck (1932-34)	1/8	2-1/4	5-3	7
4X4N, 4X4S (1939)	0-1/4	1	N 1/2-1 1/2	8	Commercial (1933-34); 50 Commercial (1935)	1/8	2-1/4	9-4 1/2	8 1/2
U10, U20, DC100T (1940-41)	0-1/4	1	N 1/2-1 1/2	8	51 Truck (1935-36)	1/8	0	5-3	8 1/2
U10T, U20T, U30T, U40T, U40D, U7062, C90, C9062,	0-1/4	1	N 1/2-1 1/2	8	67 Commercial Car (1936)	1/8	0	9-4 1/2	8 1/2
C90, C9062 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	73, 77 Commercial Car (1937)	1/8	0	9-4 1/2	8 1/2
U30, U40, C50, U50 (1940-41)	0-1/4	1	N 1/2-1 1/2	8	75, 79 Truck (1937)	1/8	0	5-3	8 1/2
C80T, C70T, C80T, C90T (1940-41)	0-1/4	1	1-2	8	81T, 817T (1938); 91T, 90T, 917T, 997T (1939) Trucks	1/8	1/10	8	8
C8044, C7044, C8044, C9044, DC10044 (1940-41)	0-1/4	1	3-6	0	81Y, 82Y (1938); 91Y, 92Y (1939) I-Ton	1/8	0	1	8
C80T, C90T (1940-41)	0-1/4	1	N 1-2	8	81C, 82C (1938); 91C, 92C (1939) Commercial	1/8	0	1	8
DC100D, DC10064, DC10062, DC10064, DU10062,	0-1/4	1	N 2 1/2-N 1 1/2	8	911W, 991W, 91W, 99W, 917W (1939) (C.O.E.)	1/8	0	1	-3 1/2
DU10064 (1940-41)	0-1/4	1	N 2 1/2-N 1 1/2	8	O18T, O98T, O1T, O9T (1940 Reg.)	1/8	0	3	8 1/2
U60T, U70T, DC100T	0-1/4	1	0-1	8	O1W, O9W, O11W, O91W (1940 C.O.E.)	1/8	0	3	8 1/2
U80T	0-1/4	1	0-1	8	O2D, O1D, O2Y, O1Y (1940 1/4- and I-Ton)	1/8	0	3	8
BANTAM 60	1/8	1 1/2	11	1 1/2	O22C, O1C (1940 Comm.)	1/8	0	3	8
65	1/8	1 1/2	15	1 1/2	118T, 119T, 11T, 19T (1941 Reg.)	1/8	0	3	8 1/2
BROCKWAY					11W, 19W, 111W, 191W (1941 C.O.E.)	1/8	0	4 1/2	8 1/2
80, 90 (1932-33)	1/8	2	1-2	9	110, 11Y, 11NY (1941 1/4- and I-Ton)	1/8	1	3	8
120, 140 (1930-33); 100, 150 (1933); 90X, 95, 110, 125X,	1/8	1	1-2	7	11C, 11NC (1941 Comm.)	1/8	1	8	8
130, 145, 150X4, 150X5 (1935)	1/8	1	1-2	7	FWD				
141, 170, 195, 220 (1930-33); 160, 260 (1932-33); 162,	1/8	2	1-2	0	M7, HS, HG, MJ6, M10, MX6X6, MJ6X6	0	1 1/2	2	4 1/2
168, 160X, 165X, 170X, 175X, 190X, 195X, 220X,	1/8	1	1-2	8	All others	0	1 1/2	2	0
240X, 260X (1935-41)	1/8	1	1-2	8	GENERAL MOTORS				
87, V1200 (1935-36); 78, 83, 88, 92, 94, 98, 110, 112,	1/8	1	1-2	8	T16, T18	1/8	1 1/2	2	7 1/2
125X, 128, 130, 145, 146, 147, 152, 153, 154, 156,	1/8	1	1-2	8	T23, T46, T51, T61, T73, T90, T74	1/8	1	2	8
150X4, 150X5 (1936-41)	1/8	1	1-2	8	T33, T43	1/8	1	2-4	8
CHEVROLET					T75, T83, T84SX, T85, T95, T110, T130, T78	1/8	1	2 1/2	8
1/2-Ton (1935-41); 3/4-Ton (1937-41)	1/8	1 1/2	1 1/2-2 1/4	7 1/2	T14 (1936)	1/8	1 1/2	2 1/2	7 1/2
1-Ton (1937-38)	1/8	1 1/2	1 1/2-2 1/4	7 1/2	T16, T16H (1936)	1/8	1 1/2	3	7 1/2
1-Ton (1939-41); 1 1/2-Ton (1935-41)	1/8	1 1/2	2 1/4-3 1/4	7 1/2	T18, T18H, T23, T23H, T33, T33H, T46, T61, T61H	1/8	1 1/2	3	7 1/2
1 1/2-Ton C.O.E. (1940-41)	1/8	1 1/2	2 1/4-3 1/4	7 1/2	(1938); F16, T16H, F16H, T18, F18, T18H, F18H,	1/8	1 1/2	3	7 1/2
CORBITT All 2-wheel drive (1936-38)	1/8	1	1 1/2-2 1/2	8					
All 2-wheel drive (1939-41)	1/8	1	2-3 1/2	8					
All front-wheel drive (1939-41)	1/8	0	5-7	0					

SPECIFICATIONS

T—Toe-Out



TRUCK MAKES AND MODELS	TOE-IN (in inches unless otherwise shown)	CAMBER (in degrees)	CASTER (in degrees)	KING PIN SLANT (in degrees)	TRUCK MAKES AND MODELS	TOE-IN (in inches unless otherwise shown)	CAMBER (in degrees)	CASTER (in degrees)	KING PIN SLANT (in degrees)
T23, F23, T23H, F23H, T33, F33, T33H, F33H, T46, F46, T46-400, F46-400, T61, F61, T61H, F61H	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8	4H, 4WH, 4J, 4WJ, 4K, 4WK, 4M, 4WM (1935)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
T18H, F18, F18H, F23, F23H, T23, T23H, T33, T33H	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8	S4P (1935)	0— $\frac{1}{8}$	$1\frac{1}{2}$	$3\frac{1}{2}$	8
T18 (1937)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$7\frac{1}{4}$	6AP (1936)	0— $\frac{1}{8}$	$1\frac{1}{2}$	$2\frac{1}{2}$	8
T18, T18H (1938)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8	1A4, 1A4H, 1CA, 1C4H, 1B4, 1B4H, 1D4, 1D4H, 2D4,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{2}$	$8\frac{1}{2}$
T46, T61, T61H	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8	2B4, 2LC4, 2H5, 2J5 (1936)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$3\frac{1}{2}$	$8\frac{1}{2}$
T14 (1937); T14, T145, T15, T155 (1938)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$7\frac{1}{4}$	2D4M, 2DM4H (1936)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
AC-100, AC-150, CC-150, CC-250	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$7\frac{1}{4}$	3H5, 3J5, 3K5 (1936)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
AC-250, AF-240	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$7\frac{1}{4}$	3HR5, 3JR5, 3KR5, 4J5, 4K5 (1936)	0— $\frac{1}{8}$	$1\frac{1}{2}$	2	7
T16, AC-300	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	8	450, 650 (1937)	0— $\frac{1}{8}$	$1\frac{1}{2}$	2	$8\frac{1}{2}$
F18, F18H, AF-300, AF-310, AF-350, AC-400, AF-400	$\frac{1}{8}$ — $\frac{1}{4}$	1	1	8	475, 675 (1937)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$3\frac{1}{2}$	$8\frac{1}{2}$
AC-350, AC-700, AF-700, AC-800, AF-800, AC-850,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{3}{4}$	8	3P7 (1937)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{2}$	$8\frac{1}{2}$
AF-850	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{3}{4}$	8	1A4, 1A4H, 1C4, 1C4H, 1B4, 1B4H, 1D4, 1D4H, 2B4,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{2}$	$8\frac{1}{2}$
F33, F33H, F46, F61H, AC-450, AF-450, CC-450,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{3}{4}$	8	2D4, 1L5, 2L4, 2L4H (1937-38)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
CF-450, AC-500, AC-550, AF-500, AF-550, AC-600,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	3	$7\frac{1}{4}$	2H5, 2J5 (1937-38)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
AF-600, AC-650, AF-650	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	3	$7\frac{1}{4}$	3H5, 3J5, 3K5, 3HR5, 3JR5, 3KR5 (1937-38)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	$8\frac{1}{2}$
CC-100	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	3	$7\frac{1}{4}$	4H5, 4J5, 4K5, 36H, 2L7M, 2L7MH, 3L6H (1937-38)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	1	$8\frac{1}{2}$
CC-260, CC-300	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	3	$7\frac{1}{4}$	1B7M, 2B7M (1938)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	1	$8\frac{1}{2}$
CC-350, CF-350, CC-400, CF-400	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8	19, 20, 21, 22, 23 (1940)	0— $\frac{1}{8}$	$1\frac{1}{2}$	$3\frac{1}{2}$	8
GRAMM					19, 20, 21, 22, 23, 4D19, 6D19, D20, OSL-41, NWL-41	0— $\frac{1}{8}$	1	$3\frac{1}{2}$	8
AX4, AX6, BX4, BX6, BXF, CX4, CX6, CXH (1933-35)	$\frac{1}{8}$	1	2	8	(1941)	0— $\frac{1}{8}$	1	$3\frac{1}{2}$	8
B, BF, C, CF (1933-35)	$\frac{1}{8}$	1	$2\frac{1}{2}$	8	STERLING All models	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8
CCF, DX (1933-35): 71, 76, 86, 96, D71, D76, D86, D96	$\frac{1}{8}$	1	$2\frac{1}{2}$	8	STEWART 41H, 46H, 47H (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8
(1940-41)	$\frac{1}{8}$	1	2	8	18XS, 48-8, 58X (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	2	$2\frac{1}{2}$	$7\frac{1}{2}$
D, DF (1933-35)	$\frac{1}{8}$	1	$2\frac{1}{2}$	8	18XS, 32X, 48-8, 58X (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	2	$2\frac{1}{2}$	$7\frac{1}{2}$
EX, E, ED (1933-35)	$\frac{1}{8}$	1	$3\frac{1}{2}$	8	27XS, 31X (1935)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8
EY190, GY (1933-35)	$\frac{1}{8}$	1	1	8	29XS, 32X (1935)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8
G, GF, GW, GWD (1933-35)	$\frac{1}{8}$	1	$2\frac{1}{2}$	8	38-8, 38-5 (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$	8
HY (1933-35)	$\frac{1}{8}$	1	1	8	40H, 60H (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$7\frac{1}{2}$
15, 25, 30, 40, 46 DJX40, 21, 31 (1936-41)	$\frac{1}{8}$	1	$1\frac{1}{2}$	9	46HB, 48HB, 47HB, 49HB (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	2	$2\frac{1}{2}$	$7\frac{1}{2}$
50, 55, 70, 75, 85, DJX55, DJX70, DJX75, DJX85	$\frac{1}{8}$	1	$1\frac{1}{2}$	9	48H, 50H (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	2	$2\frac{1}{2}$	$7\frac{1}{2}$
(1938-39); 56, D56 (1940-41)	$\frac{1}{8}$	1	2	8	49H (1935-36)	$\frac{1}{8}$ — $\frac{1}{4}$	2	$2\frac{1}{2}$	$7\frac{1}{2}$
11 (1940-41)	$\frac{1}{8}$	$1\frac{1}{2}$	1	7	40HC, 60HC (1937)	0	$1\frac{1}{2}$	$1\frac{1}{2}$	8
41, 46, D46 (1940-41)	$\frac{1}{8}$	1	$1\frac{1}{2}$	8	61H, 47A, D10A, 47A (1937-38)	0	1	$1\frac{1}{2}$	8
HUG					45A (1937-38); 45AL (1938)	0	1	$1\frac{1}{2}$	8
23, 42, 23W, 42W	$\frac{1}{8}$ — $\frac{1}{4}$	2	1	$7\frac{1}{2}$	49A, 50A, 51A, D30A (1937-38)	0	2	$1\frac{1}{2}$	$8\frac{1}{2}$
43, 70, 85W, 87, 87W, 98, 99, 99S, 15W, 19W, 83W,	$\frac{1}{8}$ — $\frac{1}{4}$	2	1	0	58A, 59A (1937-38)	0	2	$1\frac{1}{2}$	$8\frac{1}{2}$
All-wheel-drives	$\frac{1}{8}$ — $\frac{1}{4}$	2	1	0	38-6, 31X (1937-38); 38A (1940-41)	0	2	$1\frac{1}{2}$	$8\frac{1}{2}$
15, 19	$\frac{1}{8}$ — $\frac{1}{4}$	2	1	$8\frac{1}{2}$	47AB, 49AB, 51AB	0	1	$1\frac{1}{2}$	$8\frac{1}{2}$
INDIANA					49A (1940-41)	0	2	$1\frac{1}{2}$	$8\frac{1}{2}$
47DR, 43DR, 19DR, 17DR, 17ADR, 17, 17A	0— $\frac{1}{8}$	2	$1\frac{1}{2}$	0	58A, 59A (1940-41)	0	2	$1\frac{1}{2}$	8
95DR, 95, 95W75, 95SBT151, 14B, 16, 85	0— $\frac{1}{8}$	1	$1\frac{1}{2}$	8					
17ASW151, 17SW251, 17SBT251	0— $\frac{1}{8}$	1	$1\frac{1}{2}$	0					
84, 86, 87	0— $\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{2}$	7					
INTERNATIONAL									
C1, C5, C15	$\frac{1}{8}$	2	2	$7\frac{1}{2}$					
M2, C10, C20, M3	$\frac{1}{8}$	1	2	8					
A1, A2, B2, A4, C50, A5, A6, C55, C60	$\frac{1}{8}$	1	$2\frac{1}{2}$	8					
B3, C30, B4	$\frac{1}{8}$	1	1	8					
C35, CS35, C40	$\frac{1}{8}$	1	$1\frac{1}{2}$	8					
W1, W2	$\frac{1}{8}$	1	0	8					
A7, A8	$\frac{1}{8}$	1	$\frac{1}{2}$	8					
D2, D5, D15, D2M	$\frac{1}{8}$ — $\frac{1}{4}$	2	1-2	$7\frac{1}{2}$					
D30, D330, D30B, DS30B, D15M, D35, DS35, D35B,	$\frac{1}{8}$ — $\frac{1}{4}$	1	2-3	8					
DS35B, D40, DS40, D40B, D186T, DS186T,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{1}{2}$ -2	8					
D216T, DS216T, D300, DS300	$\frac{1}{8}$ — $\frac{1}{4}$	1	2-3	8					
D50, DR50, DS50, D60, DR60, DR70, D246T, DR246T,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{1}{2}$ -2	8					
DS246T, D246F, DR346T, D346F, DR426F, D500,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{1}{2}$ -2	8					
DR500, DS500, DR700	$\frac{1}{8}$ — $\frac{1}{4}$	1	$\frac{1}{2}$ -2	8					
AR626F	$\frac{1}{8}$ — $\frac{1}{4}$	1	0-1	8					
K1, K2, K3	$\frac{1}{8}$ — $\frac{1}{4}$	2	2-3	$7\frac{1}{2}$					
K4, K34, K5, KS5	$\frac{1}{8}$ — $\frac{1}{4}$	1	2-3	8					
KENWORTH									
513, 514, F209 (1936-37)	$\frac{1}{8}$ — $\frac{1}{4}$	0	5	0					
513, 514, 539, 540, 541, 542 (1938)	$\frac{1}{8}$ — $\frac{1}{4}$	0	$4\frac{1}{2}$ -7	0					
All others (1936-40)	$\frac{1}{8}$ — $\frac{1}{4}$	1	1	8					
LA FRANCE-REPUBLIC									
All models	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$ -2	8					
MARMON-HERRINGTON									
All Ford $1\frac{1}{2}$ -ton models (1936-41)	0— $\frac{1}{8}$	0	$1\frac{1}{2}$	0					
All LD models (1936-41)	$\frac{1}{8}$ — $\frac{1}{4}$	0	$1\frac{1}{2}$	$8\frac{1}{2}$					
All other models	0— $\frac{1}{8}$	0	4	0					
OSHKOSH									
JCB, JD, W-100, W-200	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	1	$8\frac{1}{2}$					
WLX, WLD, B35, B3D, C35, C3D, R35, FC35, FB35,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{2}$	0					
FS, FC, FB	$\frac{1}{8}$ — $\frac{1}{4}$	1	1	3					
W-300, W-400, W-500, W-600, W-700	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	6					
BG3, GD	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	1	6					
W-800	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	1	6					
REO									
1A, 1B (1F-1510F), 1C, 1D (1F-1900F)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$\frac{3}{4}$	8					
1B (1510F-UP), 1BR, 1BY, 1D (1900-UP), 1DP, 1DY,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$ -	$8\frac{1}{2}$					
2B, 2BR, 2D, 2DR, 2L	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$ -	7					
BA	0— $\frac{1}{8}$	$1\frac{1}{2}$	$2\frac{1}{2}$	8					
BN	0— $\frac{1}{8}$	$1\frac{1}{2}$	$3\frac{1}{2}$	8					
DA, DC, DF	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	8					
FA, FB, FC, RD, FE, FF, FH, FK	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	7					
GA (1S-975S)	$\frac{1}{8}$ — $\frac{1}{4}$	$2\frac{1}{2}$	$4\frac{1}{2}$	7					
GA (975S-2482F), GB (1S-485F), GC (1S-1194F), GD	$\frac{1}{8}$ — $\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	7					
(1F-459F), GE	$\frac{1}{8}$ — $\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	7					
GA (2482F-UP), GB (485F-UP), GC (1194F-UP), GD	$\frac{1}{8}$ — $\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$8\frac{1}{2}$					
(459F-UP)	$\frac{1}{8}$ — $\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$8\frac{1}{2}$					
1A4, 1B4, 1B4R, 1B4Y, 1C4, 1D4, 1D4R, 1D4Y, 1D4M,	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$\frac{3}{4}$	$8\frac{1}{2}$					
2B4, 2B4R, 2D4, 2D4R, 2L4, 2L4C, 2L4M, 1L5 (1935)	$\frac{1}{8}$ — $\frac{1}{4}$	$1\frac{1}{2}$	$\frac{3}{4}$	$8\frac{1}{2}$					
2L4H, 21MH, 2H, 2HR, 2J, 2JR, 2K, 2KR, 3H, 3HR,	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$ -	$8\frac{1}{2}$					
3J, 3JR, 3K, 3KR, 3M, 3MR, 3L6, 3L8, 3LC6 (1935)	$\frac{1}{8}$ — $\frac{1}{4}$	1	$1\frac{1}{2}$ -	$8\frac{1}{2}$					

LUBRICATION SPECIFICATIONS

ABBREVIATIONS

- Fibre Grease for pin and bushing type; 160 for needle bearing
- Use 90EP below 30°; 140EP above 30° on all 2-speed axles
- 10% kerosene in extremely low temperatures
- Use 40 for high speed above 90°
- Use 50 for high speed above 80°

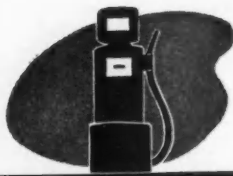
- A**—Also front axle
C—Use 90EP in two-speed axles on Models 147, 154, 156
d—If equipped with steering column shift use 90
e—If equipped with steering column shift use 80
f—Under severe conditions use 140
P—Extreme pressure

FG—Fibre Grease
H—Heavy duty
Hyp—Hypoid lubr
Kero—Kerosene
M—Mild
N—Normal duty
(S)—Summer
SS—Sodium soap
(W)—Winter



TRUCK MAKE AND MODEL		ENGINE		TRANSMISSION		REAR AXLE		STEERING GEAR		UNI- VERSAL JOINT
		Viscosity and Temperature Range		Summer	Winter	Summer	Winter	Summer	Winter	
AUTOCAR—All Models (1935-39) All Models (1940-41)		(S) 40 (S) 30 _f	(W) 30 (W) 20	160 140	110 90	160 140	110 90	160 140	110 90	160 140-90
BANTAM 60 65		(S) 30 (S) 30	(W) 20 (W) 20	160 140	90 90	160 140	90 90			None None
BROCKWAY 76, 83, 88, 92, 94, 112, 128, 146, 147 (1935-41) 152, 153, 154, 156, 162, 166, 170X, 175X, 195X, 220X, 240X, 260X (1934-41)		N30 above 32° N40 above 32°	H40 above 32° H40 or 50 above 32°	160 160	110 110	160(C) 160(C)	110(C) 110(C)	160 160	110 110	160 160
CHEVROLET—All Models (1935) All Models (1936-37) All Models (1938) All Models (1939) All Models (1940-41)		20 above 76° 20W@32°—75° 30 above 50° 20@30°—80° 30 above 50° 20@30°—50° 20 or 20W above 32° 20 or 20W above 32°	10W@-15°-32° 20W@10°-80° 10W@10°-45° 20W@10°-30° 10W@10°-10° 20W@10°-30° 10W@-10°-10° 20W@10°-30° 10W@-10°-10°	160 160 90 90 90 90 90	90† 90† 90† 90 90 90	160 160 90 90 90 90	90† 90† 90 90 90 90	160 160 90 90 90 90	110 110	160-90† 160-90† 90 90 90 90
CORBITT—All Models (1934-38) All Models (1939-40)		(S) 40 (S) 40	(W) 30 (W) 30	110 160	90 90	160 160	110 90	160 160	160 160	160 160
DIAMOND T-211, 211A, 220, 226, 227, 242, 243, 262, 311B, 311C, 312, 351B, 351C, 352, 411B, 412B, 511B, 512B (1934-35) 311DR, 351DR, 411DR, 412DR, 511DR, 512DR (1935-36) 226, 412B, 512B, 80, 212A, 212B, 221, 244, 313, 320, 353, 360 (1936-37) 412DR, 512DR (1936-37) All Models (1938-39) All Models (1940) 505, 505C, 506, 506C, 900 (1941) All Other Models (1941)		40 above 40° 40 above 40° 40 above 40° 40 above 40° 40 above 40° 40 above 40° 40 above 40° 40 above 40° 40 above 40°	30 below 40° 30 below 40° 30 below 40° 30 below 40° 30 below 40° 30 below 40° 30 below 40° 30 below 40° 30 below 40°	160 160 160 160 160 140 140 140	90 90 90 90 90 90 90	**160 **110EP **160 **110EP 160EPa 140EPb 140EPb 140EPb	** 90 **110EP ** 90 **110EP 90EPa 90EPb 140EPb 140EPb	160 160 160 160 160EP 140EP 140EP 140EP	160 160 160 160 160EP 140EP 140EP 140EP	160 160 160 160 160EP 140EP 140EP 140EP
DODGE—LC LE, LH, K-30V, K-60V, ME, MF, ML, MK, RE, RF, RL, RK, TE, TF, TL, TK, VL, VK LG, LH, MG, MH, RG, RH MC, RC, TC, TD-15, VC, VD, WC, WD MD, RD, TD-20, TD-21 TG, TH, VG, VH, VF, VM, WF, WFM, WG, WH, WGM, WHM WL, WK, WLD, WKD		40 above 90° 30@32°-90°	20W@10°-32° 10W@-10°-10°	140 140EP 140EP 140 140 140EP 140EP	90 90EP 90EP 90 90 90EP 90EP	140 140EP 140EP 140 140 140EP 140EP	90 90EP 90EP 90 90 90EP 90EP	90 90 90 90 90 90 90	90 90 90 90 90 90 90	FG 140 140 FG FG 140EP 140EP
FEDERAL—15, 16, 20, 25, T10B, T10W (1935) 25, 26, 30, 40, 40DR, 50, C7, C3, X8, X8R (1935) All (1936-37) 9 (1930); 7 (1940) C7, C8, 40, 80, 40F, 50F, 62, 63, 65, 66 (1939) 40, 50, 50H, 62, 63, 65, 66 (1940-41) 6, 10, 11, 11K, 12, 12K, 14, 14K, 16, 15K, 16, 17, 18, 18K, 20, 20K, 25, 25K, 26, 29H, 29K, 35, 40, 45, 55, 75, 75K, 76, 77, 80, 80K, 85, 85K, 89, 89H, 89K, 90, 92, 94, 94H (1939-41)		(S) 30 (S) 30 (S) 50 N30, H40@50°-110° N40, H50@50°-110° N40, H50@50°-110° N40, H50@50°-110°	(W) 30 (W) 30 (W) 30 N20, H30@15°-50° N30, H40@15°-50° N30, H40@15°-50° N40, H50@50°-110°	160 200 160 160 160 160 160	160 200 160 90 90 90 90	160 160 160 160 160 160 160	160 160 160 160 160 160 160	160 160 160 160 160 160 160	160 160 160 160 160 160 160	160 160 160 160 160 160 160
FORD—All (1932-38) All (1939-40) All (1941)		50° above 90° 40@30°-110° 40 above 90° 40 above 90°	30@20°-85° 30 above 32° 30 above 32° 30 above 32°	140 140(d) 140(d) 140(d)	90 or 110 90(e) 90(e) 90(e)	140EP 140EP 140EP 140EP	90EP or 110EP 90EP(M) 90EP(M) 90EP(M)	160 90 90 90	90 or 110 90 90 90	160 SS 140
FWD—HS, T26 (1934-35) H6, H16, CUB, CUBA, SSU, SSUA, M5, MFR, LBU, M05, 60T, 72T (1934-35) H6, H16, CUB, CUBA, SSU, SSUA, M5, MFR, LBU, M05, 60T, 72T (1934-35) All Models (1936-41)		(S) 40 (S) 40 (S) 50 (S) 50	(W) 20W (W) 30 (W) 30 (W) 30	140 140 140 140	90 90 90 90	140EP 140EP 140EP 140EP	90EP 90EP 90EP 90EP	140EP 140EP 140EP 140EP	90EP 90EP 90EP 90EP	160

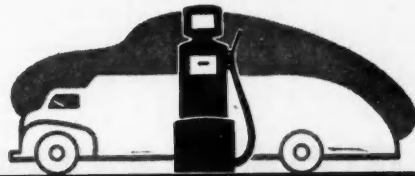
COMMERCIAL CAR JOURNAL
APRIL, 1941



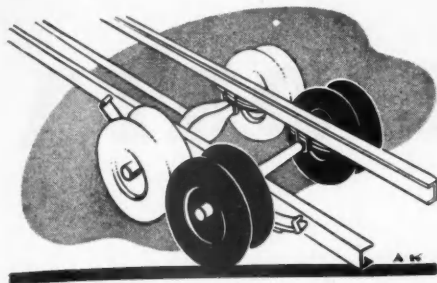
GASOLINE ENGINE

ENGINE MAKE AND MODEL	Number of Cylinders, Bore and Stroke (in.)	MAXIMUM BRAKE H.P. at R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Arrangement	VALVES					Front End Drive—Type	Piston Material	No. of Rings per Piston	Crankpin, Diameter and Length (in.)	Oil Pressure to —	CARBU- RETOR		Engine Weight without Carburetor or Ignition (Lb.)	
		With Bare Engine	With Standard Accessories					Intake	Exhaust	Intake	Exhaust	Seats						Make	Size		
												Max. Head Diam. (in.)									Stem Diam. (in.)	Angle (Deg.)	Inserts Used?
AUTOCAR																					
331	6-3 1/2 x 5	101-2600	95-2600	331.0	5.75	242-1100	L	1.90	1.65	.437	.437	(h)	E	HG	AI	4	3.25x—	abede	Zen.	1 1/4	1165
377	6-4 x 5	112-2800	106-2800	377.0	5.75	280-1100	L	1.90	1.78	.437	.437	45	E	HG	AI	4	3.25x—	abede	Zen.	1 1/4	1320
408	6-4 1/2 x 5 1/4	114-2400	104-2400	408.0	5.75	278-1100	L	2.06	1.93	.437	.437	45	E	HG	AI	4	3.25x—	abede	Str	1 1/4	1320
447	6-4 1/2 x 5 1/4	118-2400	106-2400	447.0	5.75	312-1100	L	2.06	1.93	.437	.437	45	E	HG	AI	4	3.25x—	abede	Str	1 1/4	1320
501	6-4 1/2 x 5 1/4	130-2400	120-2400	501.0	5.75	352-1100	L	2.06	1.93	.437	.437	45	E	HG	AI	4	3.25x—	abede	Str	1 1/4	1330
BUDA																					
HP-205	4-3 1/2 x 4 1/2	51-2400	43-2400	205.0	4.76	112-1200	L	1.65	1.53	.372	.372	45	N	HG	SS	4	2.12x1.62	abede	Zen	1 1/4	590
HP-217	4-3 1/2 x 4 1/2	55-2400	47-2400	217.0	5.50	123-1200	L	1.65	1.53	.372	.372	45	N	HG	CI	4	2.12x1.62	abede	Zen	1 1/4	590
HP-234	4-3 1/2 x 4 1/2	59-2400	50-2400	234.0	5.83	133-1200	L	1.65	1.53	.372	.372	45	N	HG	SS	4	2.12x1.62	abede	Str	1 1/4	770
YR-425	4-4 x 6	57-1400	48-1400	425.3	3.80	226-800	L	2.37	2.37	.434	.434	45	E	HG	CI	4	2.50x2.87	abede	Zen	1 1/4	1087
BTU	4-5 x 6 1/2	61-1200	52-1200	510.5	4.65	281-850	L	2.50	2.50	.434	.434	45	E	HG	CI	4	2.50x3.12	abede	Zen	1 1/4	1409
FR	4-5 1/2 x 6 1/2	78-1200	66-1200	618.0	4.60	350-800	L	2.50	2.50	.434	.434	45	E	HG	CI	4	2.50x3.12	abede	Zen	1 1/4	1430
HP-280	6-3 1/2 x 4 1/2	68-2800	58-2800	280.0	4.75	139-1100	L	1.65	1.53	.372	.372	45	N	HG	CI	4	2.12x1.62	abede	Zen	1 1/4	825
HP-298	6-3 1/2 x 4 1/2	77-2800	65-2800	298.0	4.75	161-1100	L	1.65	1.53	.372	.372	45	N	HG	CI	4	2.12x1.62	abede	Zen	1 1/4	825
HP-326	6-3 1/2 x 4 1/2	78-2400	66-2400	326.0	5.40	188-1100	L	1.65	1.53	.372	.372	45	N	HG	AI	4	2.12x1.62	abede	Zen	1 1/4	825
HP-351	6-3 1/2 x 4 1/2	84-2400	71-2400	351.0	5.83	201-900	L	1.65	1.53	.372	.372	45	N	HG	AI	4	2.12x1.62	abede	Zen	1 1/4	825
K-369	6-4 1/2 x 4 1/2	99-2800	84-2800	369.0	4.73	200-1200	L	1.90	1.78	.372	.372	45	N	HG	CI	4	2.37x1.75	abede	Zen	1 1/4	900
K-393	6-4 1/2 x 4 1/2	101-2400	86-2400	393.0	4.80	216-1200	L	1.90	1.78	.372	.372	45	N	HG	CI	4	2.37x1.75	abede	Zen	1 1/4	905
K-428	6-4 1/2 x 4 1/2	107-2400	91-2400	428.0	5.33	240-1200	L	1.90	1.78	.372	.372	45	N	HG	AI	4	2.37x1.75	abede	Zen	1 1/4	905
L-525	6-4 1/2 x 5 1/2	110-2400	94-2400	525.0	4.75	287-800	L	1.90	1.78	.372	.372	45	E	HG	CI	4	2.37x1.75	abede	Zen	1 1/4	950
LO-525	6-4 1/2 x 5 1/2	135-2400	115-2400	525.0	5.00	330-1100	L	1.96	1.68	.372	.372	30	E	HG	AI	5	2.37x1.75	abedeg	Zen	1 1/4	1195
GF-638	6-4 1/2 x 6	134-2000	114-2000	638.0	4.75	347-1100	L	2.50	2.37	.434	.434	30	E	HG	CI	4	3.00x2.25	abede	Zen	1 1/4	1525
M-766	6-5 x 6 1/2	155-1800	132-1800	765.8	5.00	425-1000	L	2.39	2.14	.435	.435	30	E	HG	AI	5	3.24x2.12	abedeg	Zen	1 1/4	2150
CHEVROLET																					
1941	6-3 1/2 x 3 3/4	90-3300	81-3100	216.5	6.50	174-1600	I	1.64	1.46	.341	.340	30	N	HG	CI	3	2.31x1.50	abce	Car	1 1/4	.....
1941	6-3 1/2 x 3 3/4	93-3100	83-3000	235.5	6.62	192-1450	I	1.64	1.46	.341	.340	30	N	HG	CI	3	2.31x1.50	abce	Car	1 1/4	.....
CONTINENTAL																					
F-6170	6-3 x 4	65-3460	58-3460	169.8	6.60	124-1200	L	1.51	1.32	.341	.339	(h)	E	Ch	CT	4	1.93x1.31	abce	.....	1 1/4	481
F-6199	6-3 1/2 x 4	68-3300	61-3300	199.1	6.00	150-1200	L	1.51	1.32	.341	.339	(h)	E	Ch	CT	4	1.93x1.31	abce	.....	1 1/4	491
F-6209	6-3 1/2 x 4	71-3100	64-3100	209.5	5.75	154-1200	L	1.51	1.32	.341	.339	(h)	E	Ch	CT	4	1.93x1.31	abce	.....	1 1/4	506
F-6216	6-3 1/2 x 4 1/2	73-3100	66-3100	217.8	5.95	162-1200	L	1.51	1.32	.341	.339	(h)	E	Ch	CT	4	1.93x1.31	abce	.....	1 1/4	512
A-6244	6-3 1/2 x 4 1/2	80-3000	72-3000	243.6	6.02	180-1000	L	1.57	1.32	.373	.372	(k)	E	HG	AI	5	2.12x1.37	abce	.....	1 1/4	548
M-6271	6-3 1/2 x 4 1/2	85-2800	76-2800	270.9	5.75	190-1200	L	1.76	1.51	.404	.402	(h)	E	HG	CT	4	2.25x1.56	abce	.....	1 1/4	750
M-6290	6-3 1/2 x 4 1/2	88-2750	79-2750	289.9	5.70	205-1200	L	1.76	1.51	.404	.402	(h)	E	HG	CT	4	2.25x1.56	abce	.....	1 1/4	760
M-6330	6-4 x 4 1/2	98-2700	88-2700	329.8	5.50	233-1200	L	1.76	1.51	.404	.402	(h)	E	HG	CT	4	2.25x1.56	abce	.....	1 1/4	770
B-6371	6-4 1/2 x 4 1/2	100-2650	91-2650	370.9	5.74	280-1000	L	1.89	1.64	.435	.432	(k)	E	HG	AI	5	2.50x1.81	abce	.....	1 1/4	855
B-6405	6-4 1/2 x 4 1/2	112-2800	101-2800	405.3	5.74	304-1000	L	1.89	1.64	.435	.432	(k)	E	HG	AI	5	2.50x1.81	abce	.....	1 1/4	870
20R	6-4 1/2 x 4 1/2	106-2600	95-2600	380.9	4.76	276-1200	L	2.06	1.87	.435	.433	30	E	Ch	AI	4	2.50x1.81	abcefg	.....	1 1/4	1298
21R	6-4 1/2 x 4 1/2	118-2500	106-2500	428.4	4.63	308-1200	L	2.06	1.87	.435	.433	30	E	Ch	AI	4	2.50x1.81	abcefg	.....	1 1/4	1318
22R	6-4 1/2 x 5 1/4	138-2400	124-2400	501.0	4.50	364-1200	L	2.06	1.87	.435	.433	30	E	Ch	AI	4	2.75x1.81	abcefg	.....	2	1430
DODGE																					
T-112	6-3 1/2 x 4 1/2	82-3000	74-3000	201.3	6.70	160-1200	L	1.46	1.46	.340	.340	45	E	Ch	AI	4	1.93x1.00	abce	Car	1 1/4	500
T-114, 116	6-3 1/2 x 4 1/2	85-3000	77-3000	217.7	6.50	170-1200	L	1.46	1.46	.340	.340	45	E	Ch	AI	4	2.06x1.00	abce	Str	1 1/4	535
T-118	6-3 1/2 x 4 1/2	92-3000	81-3000	228.1	6.50	176-1200	L	1.65	1.53	.340	.340	45	E	Ch	AI	4	2.12x1.21	abce	Car	1 1/4	580
T-120	6-3 1/2 x 4 1/2	99-3000	88-3000	241.5	6.50	188-1200	L	1.65	1.53	.340	.340	45	E	Ch	AI	4	2.12x1.21	abce	Car	1 1/4	600
T-124	6-3 1/2 x 5	106-2800	97-2800	331.3	5.85	240-800	L	1.93	1.75	.371	.371	45	E	Ch	AI	4	2.31x1.43	abce	Str	1 1/4	1050
FORD																					
30HP	4-3 1/2 x 3 3/4	.....	30-2800†	119.5	6.00	85-1000	L	1.54	1.28	.311	.311	45	Bo	HG	CAS	3	2.10x1.12	abc	Own	.87	.....
85HP	6-3 1/2 x 3 3/4	.....	85-3800†	221.0	(1)	(2)	L	1.54	1.54	.311	.311	45	Bo	HG	CAS	3	2.00x1.75	abc	Own	.94	.....
95HP	6-3 1/2 x 3 3/4	.....	95-3600†	239.0	6.15	176-2100	L	1.54	1.54	.311	.311	45	Bo	HG	CAS	3	2.14x1.75	abc	Own	.94	.....
FRANKLIN																					
4CHO-150	4-3 1/2 x 3 3/4	.....	43-3000	150.0	5.50	100-1200	I	1.66	1.51	.375	.375	30	Bo	HG	AI	5	1.93x1.00	ace	Op	1 1/4	315
4CHO-176	4-4 x 3 1/2	80-2500	55-2500	176.0	6.00	132-1600	I	1.93	1.50	.375	.375	(h)	Bo	HG	AI	4	1.93x1.15	abce	Zen	1 1/4	.....
G. M. C.																					
228	6-3 1/2 x 3 1/2	87-3000	79-3000	228.0	6.75	178-1000	I	1.64	1.47	.343	.343	30	E	HG	AI	4	2.31x1.23	abedeg	Zen	1 1/4	.....
248	6-3 1/2 x 3 1/2	97-3100	86-3000	248.5	6.75	195-1200	I	1.64	1.47	.343	.343	30	E	HG	AI	4	2.31x1.23	abedeg	Zen	1 1/4	.....
270	6-3 1/2 x 4	99-3000	87-3000	270.0	6.75	221-1000	I	1.64	1.47	.343	.343	30	E	HG	AI	4	2.31x1.23	abedeg	Zen	1 1/4	.....
278	6-3 1/2 x 4 1/2	100-3000	86-2800	278.6	6.00	223-1000	I	1.81	1.56	.375	.375	45	E	HG	AI	4	2.37x1.34	abedeg	Zen	1 1/4	.....
308	6-3 1/2 x 4 1/2	111-3000	87-2800	308.2	6.00	240-1200	I	1.81	1.46	.375	.375	45	E	HG	AI	4	2.37x1.34	abedeg	Zen	1 1/4	.....
361	6-4 1/2 x 4 1/2	122-2800	107-2800	360.8	6.00	278-800	I	1.94	1.72	.375	.375	(h)	E	HG	AI	4	2.62x1.47	abedeg	Zen	1 1/4	.....
426	6-4 1/2 x 5	145-2600	126-2600	426.6	6.00	340-1100	I	1.94	1.72	.375	.375	(h)	E	HG	AI	4	2.62x1.47	abedeg	Zen	1 1/4	.....
451	6-4 1/2 x 5	149-2600	130-2300	450.9	6.00	368-1200	I	1.94	1.72	.375	.375	(h)	E	HG	AI	4	2.62x1.47	abedeg	Zen	1 1/4	.....
477	6-4 1/2 x 5	153-2600	136-2600	477.1	6.00	385-1000	I	1.94	1.72	.375	.375	(h)	E	HG	AI	4	2.62x1.75	abedeg	Zen	1 1/4	.....
HERCULES																					
QXA-3, QXA-5	6-3 1/2 x 4 1/2	595																			

SPECIFICATIONS



ENGINE MAKE AND MODEL	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE H.P. at R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.)	Arrangement	VALVES						Front End Drive—Type	Piston Material	No. of Rings per Piston	Crankpin, Diameter and Length (In.)	Oil Pressure to—	CARBU- RETOR		Engine Weight without Carburetor or Ignition (Lb.)
		With Bare Engine	With Standard Accessories					Intake	Exhaust	Stem Diam. (In.)		Seats							Make	Size	
										Intake	Exhaust	Angle (Deg.)	Inserts Used?								
HERCULES—Con't																					
WXC-3	6-4 1/2 x 4 1/2	117-2800	99-2800	383.0	5.96	288-1100	L	1.75	1.75	.373	.373	45	N	HG	CI	4	2.25x1.50	abc	Op	1 1/4	820
WLXC	6-4 x 4 1/2	111-2800	94-2800	358.0	6.29	268-1100	L	1.75	1.75	.373	.373	45	N	HG	AI	4	2.25x1.65	abc	Op	1 1/4	811
WLXC-3	6-4 1/2 x 4 1/2	126-2800	107-2800	404.0	6.29	302-1000	L	1.75	1.75	.373	.373	45	N	HG	AI	4	2.25x1.65	abc	Op	1 1/4	825
YXC	6-4 1/2 x 4 1/2	116-2400	98-2400	428.4	6.29	335-1150	L	2.00	2.00	.373	.373	45	N	HG	CI	4	2.50x1.75	abc	Op	1 1/4	975
YXC-2	6-4 1/2 x 4 1/2	123-2400	104-2400	453.0	6.29	357-1100	L	2.00	2.00	.373	.373	45	N	HG	CI	4	2.50x1.75	abc	Op	1 1/4	975
YXC-3	6-4 1/2 x 4 1/2	129-2400	109-2400	478.8	6.29	374-1100	L	2.00	2.00	.373	.373	45	N	HG	CI	4	2.50x1.75	abc	Op	1 1/4	975
RXB	6-4 1/2 x 5 1/2	121-2400	103-2400	500.9	5.41	362-1100	L	2.00	2.00	.373	.373	45	N	HG	AI	5	2.50x1.75	abc	Op	1 1/4	1000
RXC	6-4 1/2 x 5 1/2	131-2400	111-2400	529.2	5.41	395-1000	L	2.00	2.00	.373	.373	45	N	HG	AI	5	2.62x2.00	abc	Op	1 1/4	1010
RLXC	6-4 1/2 x 5 1/2	144-2400	122-2400	529.2	6.20	413-1000	L	2.00	2.00	.373	.373	45	N	HG	AI	5	3.00x2.00	abc	Op	1 1/4	1195
RLXD	6-4 1/2 x 5 1/2	152-2400	129-2400	558.0	6.20	438-1000	L	2.00	2.00	.373	.373	(h)	N	HG	AI	5	3.00x2.00	abc	Op	1 1/4	1195
HXB	6-5 x 6	160-2100	136-2100	707.0	5.75	502-900	L	2.43	2.31	.498	.498	30	E	HG	AI	4	3.00x2.25	abc	Op	2	1810
HXC	6-5 1/2 x 6	177-2100	150-2100	779.0	5.69	550-1000	L	2.43	2.31	.498	.498	30	HG	AI	4	3.00x2.25	abc	Op	2	1810	
HXD	6-5 1/2 x 6	184-1800	158-1800	855.0	5.73	630-900	L	2.43	2.31	.498	.498	30	HG	AI	4	3.00x2.25	abc	Op	2	1830	
HXE	6-5 1/2 x 6	200-1800	170-1800	935.0	5.50	695-900	L	2.43	2.31	.498	.498	30	HG	AI	4	3.00x2.25	abc	Op	2	1830	
10-C	6-3 1/2 x 4 1/2	92-4000	82-4000	175.0	7.25	138-1400	L	1.37	1.37	.341	.339	45	N	HG	AI	4	1.94x1.37	Splash	Car	1 1/4	482
18C	6-3 x 5	98-4000	88-4000	212.0	6.50	167-1200	L	1.37	1.37	.341	.339	45	N	HG	AI	4	1.94x1.37	Splash	Car	1 1/4	504
INTERNATIONAL																					
HD-213	6-3 1/2 x 4 1/2	78-3400	78-3400	213.2	6.30	155-1000	L	1.68	1.46	.372	.371	45	E	Ch	CI	4	2.00x1.14	abcde	Zen	1 1/4	474
HD-232	6-3 1/2 x 4 1/2	81-3200	81-3200	232.6	6.00	170-1000	L	1.68	1.46	.372	.371	45	E	Ch	CI	4	2.00x1.14	abcde	Zen	1 1/4	550
FAB-241	6-3 1/2 x 4 1/2	84-3200	84-3200	241.5	5.80	175-800	L	1.68	1.46	.342	.342	45	E	HG	CI	4	2.12x1.34	abcde	Zen	1 1/4	742
FAB-259	6-3 1/2 x 4 1/2	89-3200	89-3200	259.7	5.74	192-800	L	1.68	1.46	.342	.342	45	E	HG	CI	4	2.12x1.34	abcde	Zen	1 1/4	732
FBB-298	6-3 1/2 x 4 1/2	94-2800	94-2800	298.2	5.70	218-1600	L	1.87	1.75	.372	.372	45	E	HG	AL	4	2.25x1.40	abcde	Zen	1 1/4	907
FBB-361	6-4 1/2 x 4 1/2	111-2700	111-2700	360.8	5.20	268-1500	L	2.25	1.62	.372	.372	45	E	HG	AL	4	2.25x1.40	abcde	Zen	1 1/4	935
FBB-401	6-4 1/2 x 5	114-2600	114-2600	400.9	5.20	308-800	L	2.25	1.62	.372	.372	45	E	HG	AL	4	2.25x1.40	abcde	Zen	1 1/4	945
FBB-450	6-4 1/2 x 5	120-2400	120-2400	451.0	5.20	331-800	L	2.25	1.62	.372	.372	45	E	HG	AL	4	2.25x1.40	abcde	Zen	1 1/4	960
FEB	6-5 x 5 1/2	140-2100	140-2100	648.0	5.35	530-600	L	2.37	2.37	.430	.430	45	E	HG	AL	4	2.75x2.25	abcde	Zen	1 1/2	1790
MACK																					
EN-11	6-3 1/2 x 4 1/2	67-3000	58-3000	210.0	6.00	145-1100	L	1.51	1.34	.343	.343	30	E	HG	CI	4	1.93x1.31	abc	Str	1 1/4	501
EN-12	6-3 1/2 x 4 1/2	72-3000	60-3000	226.0	5.94	166-1000	L	1.51	1.34	.343	.343	30	E	HG	AI	5	2.06x1.31	abc	Str	1 1/4	510
FO	6-3 1/2 x 4 1/2	78-3000	67-3000	253.0	5.76	175-1200	L	1.76	1.51	.406	.406	(h)	E	HG	AI	5	2.25x1.56	abc	Str	1 1/4	749
FM	6-3 1/2 x 4 1/2	87-3000	72-3000	271.0	5.98	193-1200	L	1.76	1.51	.406	.406	(h)	E	HG	AI	5	2.25x1.56	abc	Str	1 1/4	738
FK	6-3 1/2 x 4 1/2	94-3000	79-3000	290.0	5.96	200-1100	L	1.76	1.51	.406	.406	(h)	E	HG	AI	5	2.25x1.56	abc	Str	1 1/4	759
EN-310	6-3 1/2 x 5	100-2850	85-2850	309.8	5.60	213-1200	L	1.89	1.73	.375	.375	30	E	HG	Ala	5	2.37x1.62	abc	Str	1 1/2	885
EN-330	6-4 x 3 1/2	100-2800	86-2800	330.0	6.00	244-1000	L	1.76	1.51	.406	.406	(h)	E	HG	AI	5	2.25x1.56	abc	Str	1 1/2	771
EN-354	6-3 1/2 x 5	115-2850	99-2850	353.8	5.50	254-1200	L	1.89	1.76	.375	.375	30	E	HG	Ala	5	2.37x1.62	abc	Str	1 1/2	907
EN-405	6-4 x 5 1/2	119-2650	101-2650	405.0	5.80	300-1100	L	2.17	2.01	.500	.500	30	E	HG	AI	5	2.75x1.71	abc	Str	1 1/2	1488
CE	6-4 x 5 1/2	108-2400	96-2400	414.7	5.00	270-1000	L	2.17	2.01	.500	.500	30	E	HG	AI	5	2.50x1.81	abc	Str	1 1/2	1199
EN-457	6-4 1/2 x 5 1/2	133-2550	117-2550	457.0	5.56	338-1100	L	2.17	2.01	.500	.500	30	E	HG	AI	5	2.75x1.71	abc	Str	1 1/2	1492
CF	6-4 1/2 x 5 1/2	118-2400	105-2400	467.9	5.00	310-1000	L	2.17	2.01	.500	.500	30	E	HG	AI	5	2.50x1.81	abc	Str	1 1/2	1209
CT	6-4 1/2 x 5 1/2	126-2400	112-2400	524.8	4.80	350-1000	L	2.17	2.01	.500	.500	30	E	HG	AI	5	2.50x1.81	abc	Str	1 1/2	1214
EO	6-4 1/2 x 5 1/2	145-2350	130-2350	519.0	5.40	378-1000	L	2.18	1.89	.437	.437	30	E	HG	AI	5	3.00x2.09	abc	Str	1 1/2	1687
EP	6-4 1/2 x 5 1/2	163-2250	140-2250	611.0	5.40	462-1000	L	2.18	1.89	.437	.437	30	E	HG	AI	5	3.00x2.09	abc	Str	2	1700
EY	6-5 x 6	178-2150	156-2150	707.0	5.35	530-600	L	2.18	1.89	.437	.437	30	E	HG	AI	5	3.00x2.09	abc	Str	2	1710
PLYMOUTH																					
T-125	6-3 1/2 x 4 1/2	82-3000	201.3	6.70	160-1200	L	1.47	1.47	.340	.340	45	E	Ch	AI	4	1.93x1.00	abc	Car	1 1/4	.....
REO																					
GC-228	6-3 1/2 x 4 1/2	78-3200	78-3200	228.0	6.20	169-1100	L	1.78	1.62	.373	.373	45	E	Ch	AI	4	2.19x1.50	abcde	Zen	1 1/4	758*
GC-245	6-3 1/2 x 4 1/2	80-3000	80-3000	245.0	6.20	182-1000	L	1.78	1.62	.373	.373	45	E	Ch	AI	4	2.19x1.50	abcde	Zen	1 1/4	763*
GC-288	6-3 1/2 x 5	88-2800	88-2800	288.0	6.00	215-900	L	1.78	1.62	.373	.373	45	E	Ch	AI	4	2.19x1.50	abcde	Zen	1 1/4	785*
GC-310	6-3 1/2 x 5	93-2700	93-2700	310.0	5.80	234-800	L	1.78	1.62	.373	.373	45	E	Ch	AI	4	2.19x1.50	abcde	Zen	1 1/4	785*
6MZR	6-4 1/2 x 4 1/2	95-2300	95-2300	404.0	5.35	280-750	L	1.75	1.25	.....	.....	.....	E	HG	AI	4	2.25x1.50	abcde	Zen	1 1/2	920
6SRKR	6-4 1/2 x 5 1/2	126-2300	126-2300	517.0	5.50	360-600	L	1.87	1.37	.....	.....	.....	N	HG	AI	4	2.75x1.75	abcde	Zen	1 1/4	1225
WAUKESHA																					
6BL	6-3 1/2 x 4 1/2	72-2800	51-2000	245.0	5.70	165-1300	L	1.68	1.43	.375	.375	45	E	HG	AI	4	2.00x1.50	abcde	Op	1 1/4	675
6BM	6-3 1/2 x 4 1/2	77-2800	54-2000	283.0	5.70	178-1100	L	1.68	1.43	.375	.375	45	E	HG	AI	4	2.00x1.50	abcde	Op	1 1/4	685
6BK	6-3 1/2 x 4 1/2	82-2800	59-2000	282.0	5.70	189-1100	L	1.68	1.43	.375	.375	45	E	HG	AI	4	2.00x1.50	abcde	Op	1 1/4	690
6BZ	6-4 x 4 1/2	86-2800	65-2000	320.0	5.75	210-1000	L	1.68	1.43	.375	.375	45	E	HG	AI	4	2.00x1.50	abcde	Op	1 1/4	706
6MKR	6-4 1/2 x 4 1/2	98-2500	61-1600	381.0	5.34	270-800	L	1.93	1.43	.375	.375	45	E	HG	AI	4	2.25x1.50	abcde	Op	1 1/2	.....
6MZR	6-4 1/2 x 4 1/2	106-2500	66-1600	404.0	5.38	286-800	L	1.93	1.43	.375	.375	45	E	HG	AI	4	2.25x1.50	abcde	Op	1 1/2	920
140-GS	6-4 1/2 x 5 1/2	122-2250	91-1500	468.0	5.00	382-1000	L	2.12	1.56	.434	.434	(h)	E	HG	AI	4	2.62x2.00	abcdeg	Op	1 1/4	1340
6SRLR	6-4 1/2 x 5 1/2	112-2250	72-1500	462																	



THIRD AXLE SPECIFICATIONS

ABBREVIATIONS:

General
**—Truxmore—Heavy steel beams (cushioned by patented spring arrangement) used in place of leaf springs
(x)—Patented 4-wheel chain drive available for all Trucktor units
(z)—Depends upon installation

COLUMN 9
Chev—Chevrolet
Eaton
Ford—Ford
Own—Own
Shu—Shuler
Tim—Timken

COLUMN 10
D—Driving
Sr—Solid round
Sq—Square
T—Tubular

COLUMN 13
CA—Cast Alloy Iron

COLUMN 12
B—Bendix
C—Chevrolet
F—Ford
H—Hydraulic
L—Lockheed
M—Mechanical
O—Own
V—Vacuum power

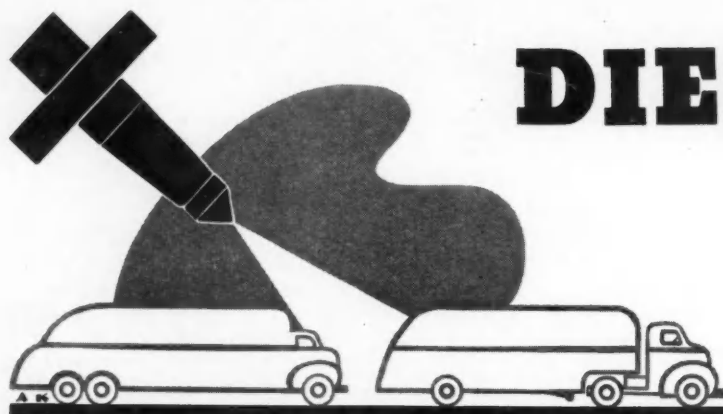
OPTIONAL BRAKES

Little Giant—Own or Bendix
Utility—Bendix and Lockheed

NOTES ON HEADINGS

General—(a) The capacity of the third axle (Column 2) is not to be confused with the total capacity made possible on the converted vehicle.
Column 3. The price of the unit includes the standard brakes specified in brake column and frame extensions that extend forward under the cab. Tires and brake (air or vacuum) power are not included in price nor is the cost of installation.
Column 4. Weight of third axle unit includes all appurtenances and maximum tires.
Column 15 gives brake lining area of attachment unit only.

THIRD AXLE MAKE AND MODEL and Truck Model Adapted To	Capacity (Lb.) See Explanatory Notes	Price (f. o. b. factory)	Weight (Lb.) with Max. Tires, Frame Extension, Etc.	Maximum Tire Size	LOAD DIS- TRIBUTION RANGE		Axle Spacing (with maximum tires)	AXLE DATA			BRAKES (Standard)					Number of Points of Frame Support	Spring Size or Number Leaves Added	Spindle Diameter (at inner bearing)
					(First Figure or combination applies to center axle; second figure to third axle)			Make	Type	Size	Make and Type	Drum Material	Brake Diameter and Width	Lining Area				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Trailing Axles																		
FABCO																		
215 (Ford)	11000	490	2000	34x7	52-48		44	Tim	T	4 1/2	LH	CA	15x3 1/2	192	2	48x2 1/2	2 1/2	
215 (Chevrolet)	11000	490	2000	34x7	52-48		44	Tim	T	4 1/2	LH	CA	16x2 1/2	132	2	48x2 1/2	2 1/2	
215 (All other makes)	11000	490	2000	34x7	52-48		44	Tim	T	4 1/2	LH	CA	16x3 1/2	205	2	48x2 1/2	2 1/2	
330 (All other makes)	13000	550	3000	9.75/20	52-48		48	Tim	T	4 1/2	LH	CA	16x3 1/2	205	2	55x3	2 1/2	
LITTLE GIANT																		
6-ton (For any 1 1/2 ton truck)	12000	308	1200	2x6	47-53	50-50	42	Own	Sr	2 3/4	BHV†	CA	16x2 1/2	167	6	22x2 1/2	2	
8-ton (For any 1 1/2 ton truck)	16000	451	1575	34x7	60-40		42	Shu	Sq	2 3/4	BHV†	CA	16x3	167	4	42x2 1/2	2 3/4	
8-ton (For any 2 ton truck)	18000	575	2000	8.25/20	50-50		42	Shu	Sr	2 3/4	BHV†	CA	16x3 1/2	180	4	42x3	3	
10-ton (For any 2 1/2 to 5 ton truck)	20000	695	2410	9.75/20	50-50		44	Shu	Sq	4	BHV†	CA	17 1/4x4	250	4	44x3 1/2	3	
TRUCKTOR (x)																		
HLF (Ford 1 1/2)	8800	480	1750	7.50/20	50-50	60-40	43	Own	Sr	3	LHV	CA	15x3 1/2	196	6	38 1/2x2 1/2	2 1/2	
HLC (Chevrolet 1 1/2)	8800	480	1750	7.50/20	50-50	60-40	43	Own	Sr	3	CHV	CA	16x3	219	6	38 1/2x2 1/2	2 1/2	
HLL (Light truck tires to 32x6-10 ply)	11000	575	1895	8.25/20	50-50	60-40	45	Own	Sr	3	LHV	CA	16x2 1/2	132	6	38 1/2x2 1/2	2 1/2	
HLS (Medium truck tires to 9.00/22)	14000	881	2265	9.00/22	50-50	60-40	48	Own	Sr	3 1/4	LHV	CA	16x3 1/2	205	6	38 1/2x3	2 1/2	
HLR (Heavy truck tires to 9.75/22)	16000	1098	2710	9.75/22	50-50	60-40	48	Own	Sr	3 1/2	LHV	CA	17 1/4x4	251	6	40x3	2 1/2	
HR (Extra heavy truck tires above sizes listed)	21000	1282	3177	10.50/24	50-50	60-40	52	Own	Sr	4	LHV	CA	17 1/4x4	251	6	41 1/2x3	3 3/8	
TRUXMORE																		
22 (Chevrolet)	10000	539	2250	7.00/20	56-44	65-35	42-43	Own	Sq	2 1/2	LHV	CA	15x3 1/2	200	4	**	2 1/2	
22F (Ford)	10000	539	2250	7.00/20	56-44	65-35	42-43	Own	Sq	2 1/2	LHV	CA	15x3 1/2	200	4	**	2 1/2	
22X (All makes, not exc. 253 cu. in.)	10000	560	2250	7.00/20	56-44	65-35	42-43	Own	Sq	2 1/2	LHV	CA	15x3 1/2	200	4	**	2 1/2	
23 (All makes, not exc. 271 cu. in.)	11000	617	2500	7.00/18	54-46	65-35	44-45	Own	Sq	2 3/4	LHV	CA	15x3 1/2	200	4	**	2 1/2	
26X (Chev. and all makes not exc. 271 cu. in.)	12000	604	2500	7.50/20	54-46	65-35	44-45	Own	Sq	2 3/4	LHV	CA	15x3 1/2	200	4	**	2 1/2	
26XF (Ford)	12000	604	2500	7.50/20	54-46	65-35	44-45	Own	Sq	2 3/4	LHV	CA	15x3 1/2	200	4	**	2 1/2	
27 (All makes)	12000	787	2600	7.50/20	53-47	65-35	45-46	Own	Sq	2 3/4	LHV	CA	16x3 1/2	210	4	**	2 1/2	
28 (All makes)	13000	797	2700	8.25/20	53-47	65-35	45-46	Own	Sq	3	LHV	CA	16x3 1/2	210	4	**	2 1/2	
28PS (All makes, 30000 GVW)	14000	853	2900	9.00/20	53-47	65-35	46-47	Own	Sq	3	LHV	CA	16x3 1/2	210	4	**	2 1/2	
33 (All makes)	15000	903	3200	9.00/20	52-48	65-35	46-47	Own	Sq	3	LHV	CA	17 1/4x4	251	4	**	2 1/2	
35 (All makes)	15000	936	3300	9.00/22	52-48	65-35	47-48	Own	Sq	3	LHV	CA	17 1/4x4	251	4	**	2 1/2	
33PS (All makes, 36000 GVW)	16000	975	3500	10.00/20	52-48	65-35	48-49	Own	Sq	3 1/4	LHV	CA	17 1/4x4	251	4	**	3 1/8	
39 (All makes)	17000	1000	3600	10.00/20	52-48	65-35	48-49	Own	Sq	3 1/4	LHV	CA	17 1/4x4	251	4	**	3 1/8	
42 (All makes)	17000	1025	3700	10.00/22	52-48	65-35	49-50	Own	Sq	3 1/4	LHV	CA	17 1/4x4	251	4	**	3 1/8	
47 (All makes)	18000	1112	3900	11.00/20	50-50	65-35	49-50	Own	Sq	3 1/2	LHV	CA	17 1/4x5	350	4	**	3 1/8	
50 (All makes)	18000	1137	4000	11.00/22	50-50	65-35	50-51	Own	Sq	3 1/2	LHV	CA	17 1/4x5	350	4	**	3 1/8	
50X (All makes)	18000	1150	4100	11.00/24	50-50	65-35	51-52	Own	Sq	3 1/2	LHV	CA	17 1/4x5	350	4	**	3 1/8	
UTILITY																		
15 (For any 1 1/2 ton truck)	7500	313	900	7.00/20	55-45	66-33	40	Own	Sq	2 1/2	BM†	CA	15x2 1/2	152	4	None	2 1/2	
25 (For any 2 ton truck)	9000	419	1100	7.50/20	55-45	66-33	41	Own	Sq	2 1/2	OMV†	CA	16x3 1/2	210	4	None	2 1/2	
30 (For any 3 1/2 ton truck)	13000	665	1600	9.00/20	55-45	66-33	44	Own	Sq	3	OMV†	CA	17x4	264	4	None	2 1/2	
35 (For any 5 ton truck)	18000	785	1900	10.50/24	55-45	66-33	50	Own	Sq	3 1/2	OMV†	CA	17x4	264	4	None	2 1/2	
300	15000	705	1560	10.50/24	55-45	66-33	44	Own	Sq	3	OMV†	CA	17x4	264	4	8	2 1/2	
Driving Axles																		
FABCO																		
515 (Ford)	10500	1165	2400	34x7	50-50		44	Tim	D		FH	CA	15x3 1/2	192	2	48x2 1/2	2 1/2	
515 (Chevrolet)	10500	1165	2400	34x7	50-50		44	Chev	D		CH	CA	16x3	176	2	48x2 1/2	2 1/2	
515 (All other makes)	10500	(z)	2400	34x7	50-50		44	Match	D		LH	CA	Match	(z)	2	48x2 1/2	2 1/2	
630 (All other makes)	13000	(z)	3000	9.75/20	50-50		48	Match	D		LH	CA	Match	(z)	2	53x3	2 1/2	
THORNTON TANDEM																		
CF28F (Ford)	11000	1125	6600	34x7	50-50		42	Ford	D	3 3/4	LH	CA	15x3 1/2	198	4	42x2 1/2	2 1/2	
CF27FO (Ford)	11000	1125	6760	34x7	50-50		42	Ford	D	3 3/4	LH	CA	15x3 1/2	198	4	42x2 1/2	2 1/2	
CF29E (Ford)	12750	1250	7220	34x7	50-50		42 1/2	Eat	D	4 1/4	LH	CA	15x3 1/2	198	4	42x2 1/2	2 1/2	
CF30EO (Ford)	12750	1250	7380	34x7	50-50		42 1/2	Eat	D	4 1/4	LH	CA	15x3 1/2	198	4	42x2 1/2	2 1/2	
CF30E (Ford)	13500	1600	7720	34x7	50-50		44	Eat	D	4 1/4	LH	CA	16x3 1/2	198	4	43 1/2x2 1/2	2 1/2	
CF31EO (Ford)	13500	1600	7880	34x7	50-50		44	Eat	D	4 1/4	LH	CA	15x3 1/2	198	4	42 1/2x2 1/2	2 1/2	
CC26C (Chevrolet)	11000	1100	6175	34x7	50-50		42	Chev	D	3 1/2	LH	CA	16x3	218	4	42x2 1/2	2 1/2	
CC27CO (Chevrolet)	11000	1100	6690	34x7	50-50		42	Chev	D	3 1/2	LH	CA	16x3	218	4	42x2 1/2	2 1/2	
CC29T (Chevrolet)	12750	1550	6795	34x7	50-50		46	Tim	D	3 3/4	LH	CA	16x3	218	4	46x2 1/2	2 1/2	
CC30TO (Chevrolet)	12750	1550	7310	34x7	50-50		46	Tim	D	3 3/4	LH	CA	16x3	218	4	46x2 1/2	2 1/2	
CC30E (Chevrolet)	13500	1675	7295	34x7	50-50		44	Eat	D	4 1/4	LH	CA	16x3	218	4	43 1/2x2 1/2	2 1/2	
CC31EO (Chevrolet)	13500	1675	7810	34x7	50-50		44	Eat	D	4 1/4	LH	CA	16x3	218	4	42 1/2x2 1/2	2 1/2	
CD24TF (Dodge)	11000	1075	6400	34x7	50-50		42	Tim	D	3 3/4	LH	CA	16x3	172	4	42x2 1/2	2 1/2	
CD24TH (Dodge)	11000	1150	6870	34x7	50-50		42	Tim	D	3 3/4	LH	CA	16x3	172	4	42x2 1/2	2 1/2	
CD26EF (Dodge)	12750	1250	7020	34x7	50-50		42 1/2	Eat	D	4 1/4	LH	CA	16x2 1/2	174	4	42x2 1/2	2 1/2	
CD28EH (Dodge)	12750	1300	7490	34x7	50-50		42 1/2	Eat	D	4 1/4	LH	CA	16x2 1/2	174	4	42x2 1/2	2 1/2	
CD34TK (Dodge)	14000	1375	8430	900/20	50-50		42 1/2	Tim	D	4 1/4	LH	CA	17 1/4x4	274	4	42x2 1/2	3 1/4	
CD34EK (Dodge)	15000	1500	8830	900/20	50-50		44	Eat	D	4 1/2	LH	CA	17x4	407	4	43 1/2x2 1/2	3	



DIESEL DATA

• DIESEL FUEL SPECIFICATIONS •

DIESEL FUEL TRADE NAME	Cetane No.	Viscosity SSU 100 Deg. F.	Water & Sediment Max. %	Carbon Residue Max. %	Ash Max. %	Flash Min. Deg. F.	Sulphur Max. %	A.S.T.M. DISTILLATION				Gravity	Pour Point Max. Deg. F.	AREAS OF DISTRIBUTION
								IBP	10%	90%	End Point			
American Oil Co. Amoco Fuel No. 2.....	45	35min.	0	0.1	0.004	135	0.25	360	428	581	625	30-34	0	From Maine to Florida and inland.
Atlantic Refining Co. Furnace Oil Medium.....		33-40	0.05	0.20		130-160	0.5		410		610		0	Mass., R. I., Conn., N. Y., State Barge Canal, Eastern half Penna., N. J., Del., Baltimore.
Diesel Engine Fuel Oil.....	45	37-41	Trace		0.01	150	0.5		460	650		30min.	0	From Philadelphia only.
Cities Service Oil Co. Diesel Fuel No. 1.....	50-55	35	Trace	0.01	0.01	150	0.25		480		650		5	New England and Middle Atlantic states.
Diesel Fuel No. 2.....	50-55	37-40	0		Trace	150			460		700	38-39	-10	Central and Mid-Continent Areas.
Continental Oil Co. Conoco Diesel Fuel.....	56	35-37	None	0.1	None	150	0.15	460	495	575	600	38-40	0	Okla., Kan., Neb., Iowa, Ill., Ind., Mo., E. Minn., Wyo., Colo., N. Texas, Ark.
Conoco Diesel Fuel.....	62	35-37	Trace	0.15	Trace	150	0.2	380	460	530	650	39-41	15	Wyo., Mont.
Conoco Diesel Fuel.....	58	35-37	Trace	0.05	Trace	200	0.2	450	490	550	610	37-39	0	Texas.
Conoco Diesel Fuel.....	54	38-40	0.05	0.1	Trace	150	0.8	400	490	610	700	34-36	20	New Mexico, Texas.
Conoco Diesel Fuel.....	61	35-37	Trace	0.05	Trace	150	0.2	375	470	560	650	39-41	15	Colorado.
Conoco Diesel Fuel.....	56	37-39	Trace	0.2	Trace	150	1.0	470	525	630	700	35-37	10	Montana, Idaho.
Eso Marketers Esodiesel 206.....	56	37	0	Nil	0	180	0.50	400	460	580	650		-10	N. E., N. Y., Pa., S. C., N. C., Va., W. Va., Tenn., La., Ark., Md., Del., D. C., N. J.
Esodiesel 230.....	50	35	0	0.01	0	170	0.65	380	440	580	680		-10	
Phillips Petroleum Co. Phillips Diesel Regular.....	50	35-45	Trace	0.05	0	150	0.5	375	490	600	675	38-40	15	Colo., N. Mex., Western Texas.
Phillips Diesel Regular.....	50	35-45	Trace	0.02	0	150	0.2	350	460	630	675	38-40	0-10	Ark., Kan., Ill., Iowa, Minn., Mo., Neb., Okla.
Phillips Diesel Special.....	50	33-40	Trace	0.02	0	140	0.15	325	440	600	650	39-41	0	Kan., Ill., Iowa, Minn., Mo., Neb.
Phillips Diesel Light.....	45	30-32	Trace	0.01	0	120	0.15	325	410		520	42-44	-20	Kan., Ill., Iowa, Minn., Mo., Neb.
Pure Oil Co.....	45-55	33min.	Trace	0.03	Trace	150	0.5	325 min.			630		0	East of Mississippi River, excluding New England, including Minnesota.
Shell Oil Co. (San Fran.) "Dieseline Pacific".....		38-44	0.1	0.1	0.01	150	1.0					29min.	15	Cal., Ore., Wash., Nev., Ariz., Idaho, Utah, western N. Mex., Mont., Wyo.
Shell Oil Co., Inc. (N. Y.) "Dieseline".....	48-57	35-40	0	0.03	0.01	150	1.0					30.40	0	Ark., Iowa, La., Minn., Mo., Texas and East of Mississippi River.
Sinclair Refining Co. 155 Diesel Fuel.....	55	32	0	0.01	0	125	0.05		385	490	555	41-43	-10	All states listed below.
250 Diesel Fuel.....	55	35	0	0.02	0	150	0.25		440	600	625	34-40	0	Me., N. H., Vt., Conn., R. I., Mass., N. Y., N. J., Pa., Del., Md., D. C., Va., W. Va., Ala., Fla., Ga., Miss., N. C., S. C., Tenn., Ky., Okla., Ark., La., Texas, N. Mex.
346 Diesel Fuel.....	45	34	0	0.1	0	130	0.10		410	550	640	38-40	0	Ind., Ill., Mich., Ohio, Wis., Utah, Colo., Wyo., Idaho, Iowa, Kans., Minn., Miss., Mont., Neb., N. D., S. D.
347 Diesel Fuel.....	50	33	0	0.1	0	130	0.5		420	570	650	32-38	0	Utah, Colo., Idaho, Wyo., Iowa, Kan., Minn., Mo., Mont., Nev., Neb., N. D., S. D.
355 Diesel Fuel.....	50	36	0	0.2	0	150	0.25	400	450	600	675	36-39	10	Ind., Ill., Mich., Ohio, Wis., Utah, Colo., Wyo., Idaho, Iowa, Kans., Minn., Miss., Mont., Neb., N. D., S. D.
Socory-Vacuum Oil Co. Mobilfuel Diesel.....	50min.	35min.	Trace		0.01	150	0.5		440	600	700		0	Wherever demand exists.
Standard Oil Co. of Calif. Standard Diesel.....	43-45	37-40	Trace			150-200	1.25		425	620		27	0-15	Cal., Ore., Wash., Idaho, Nev., Ariz., Utah.
Std Automotive Diesel.....	59-62		Trace			125-165			350-420	450-540	585			Main supply points Cal. and Wash.
Standard Oil Co. of Ind. Stanolind H. S. Diesel.....	50	35min.	0.05	0.15	0.01	150	0.50				675		0	Mich., Ind., Ill., Minn., Iowa, Mo., N. D., S. D., Kan., Mont., Wyo., Colo.
Stanolind Diesel.....	45	33	0.05			150	1.0		440	570	650	34-38	0	
Standard Light Diesel.....	50	31	0.05	0.03		125	0.15		410	530	590	39-43	-25	
Sun Oil Company Diesel Fuel Light.....	50-55	33-38	0.05	0.1	Trace	125	0.15	355-380	440	620	650	34-39	5	Phila., N. J. (Atlantic City, Newark, Trenton); Wilmington, Baltimore, Providence, Bridgeport, N. Y. (N. Y. C., Newburgh, Peekskill, Syracuse, Rochester, Westchester Co.).
The Texas Co. 445 Diesel Chief.....	45-55	32-40	0.02	0.05	0.01	150	0.75					35-40	-30-0	Wherever demand exists.
422 Diesel Chief.....	45-51	30-32	0.02	0.05	0.01	140	0.50					40-45	-30	Wherever demand exists.
Tide Water Assoc. Oil Co. Tide Water Div. (N. Y.) Tydol No. 2.....	50	35	0.05	0.03	Trace	125-170	0.50		440	600	645	35	0	N. E., N. Y., N. J., Pa., Md., D. C.
Associated Div. (Cal.) Assoc. Motor Diesel.....	50	38	Trace	0.03	0	150	0.75	420	460	620	720	31-34	0	Cal., Ore., Wash., parts of Idaho, Nev., Ariz.
Union Oil Co. of Calif. "Diesel".....	48-50	40	Trace	0.05	Trace	150	0.75	415	465	640	720	33	20	Ariz., Idaho, Nev., Cal., Ore., Wash.
"Diesel-100".....	50	33	Trace	0.05	Trace	120	0.75	345	420	550	580	39	0	Ariz., Idaho, Nev., Cal., Ore., Wash.

• DIESEL ENGINE SPECIFICATIONS •

DIESEL ENGINE MAKE AND MODEL	Type	Number of Cylinders Bore and Stroke (In.)	Cycle	Piston Displacement (Cu. In.)	HORSEPOWER			Compression Ratio - to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lbs. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.)	VALVES			Pressure—Nozzle Opening (Lb. per Sq. In.)	Minimum Recommended Cetane Number of Fuel	Starting Method
					With Bare Engine	With Standard Accessories								Arrangement	Intake Port Diameter and Lift (In.)	Exhaust Port Diameter and Lift (In.)			
						Maximum Brake Hp. at Specified R.P.M.	Max. Intermittent Hp. at Specified R.P.M.												
BUDA																			
4DT-212	AC	4-3 1/2 x 5 1/2	4	212	50.5-2300	49-2300	37-1800	14.50	725	77	25.7	123.5-1400	950	VI	1.37-.486	1.18-.486	2000	46	Ele
4-DT-226	AC	4-3 1/2 x 5 1/2	4	226	58.5-2000	49-2000	39-1800	14.50	725	76	24.3	132-1400	950	VI	1.37-.486	1.18-.486	2000	46	Ele
6-DT-278	AC	6-3 1/2 x 4 1/2	4	278	82-2600	69-2600	47-1800	14.50	725	74	23.5	161.8-1500	1105	VI	1.37-.486	1.18-.486	2000	46	Ele
6-DT-294	AC	6-3 1/2 x 4 1/2	4	294	85-2400	71-2100	51-1800	14.50	725	76	21.9	177-1500	1115	VI	1.37-.486	1.18-.486	2000	46	Ele
6-DT-317	AC	6-3 1/2 x 5 1/2	4	317	90-2300	75-2300	52.5-1800	14.50	725	73	21.6	185.4-1500	1133	VI	1.37-.486	1.18-.486	2000	46	Ele
6-DT-389	AC	6-3 1/2 x 5 1/2	4	389	96-2100	74.5-2100	57-1600	14.20	725	73	24.5	222.5-1100	1400	VI	1.44-.476	1.31-.476	2000	46	Ele
6-DT-468	AC	6-4 1/2 x 5 1/2	4	468	113-2000	89-2000	68-1600	14.20	725	72	21.1	268.5-1100	1435	VI	1.59-.476	1.37-.476	2000	46	Ele
6-DH-691	AC	6-4 1/2 x 6 1/2	4	691	150-1800	123-1800	81-1200	13.70	725	77	28.0	404-1100	2270	VI	1.72-.516	1.56-.516	2000	46	Ele
CATERPILLAR																			
D-468	PC	6-4 1/2 x 5 1/2	4	468		90-1800			85	23.5	305-900	2120	VI				1500	35	Ele
D-312	PC	4-4 1/2 x 5 1/2	4	312		60-1800			85	25.0	193-1200	1500	VI				1500	35	Ele
CUMMINS																			
A	DI	4-4x5	4	251		56.5-2200	33-1400	18.00	750	74	41.1	180-1200	1355	VI	1.37-.406	1.37-.406		50	Ele
A	DI	6-4x5	4	377		85-2200	57-1600	18.00	750	75	32.1	275-1200	1830	VI	1.37-.406	1.37-.406		50	Ele
H	DI	4-4 1/2 x 6	4	448		83-1800	50-1200	17.00	750	74	38.6	340-800	1930	VI	1.93-.500	1.93-.500		50	Ele
H	DI	6-4 1/2 x 6	4	672		125-1800	85-1400	17.00	750	72	29.9	500-800	2540	VI	1.93-.500	1.93-.500		50	Ele
HS	DI	6-4 1/2 x 6	4	672		175-1800		14.00	925	114		625-1400	3000	VI	1.93-.500	1.93-.500		50	Ele
DODGE																			
T-126	AC	6-3 1/2 x 5	4	331	100-2600		95-2600	14.75	900	87	14.0	240-1600	1330	VI	.375	.375	2000	40	Ele
GEN'L MOTORS																			
3-71	DI	3-4 1/2 x 5	2	212		83-2000	62-2000	16.00	980	58	18.5	263-1000	1150	VI	No Valves	1.25-.375	1500	40	Ele
4-71	DI	4-4 1/2 x 5	2	284		110-2000	83-2000	16.00	980	58	15.7	350-1000	1300	VI	No Valves	1.25-.375	1500	40	Ele
6-71	DI	6-4 1/2 x 5	2	425		165-2000	123-2000	16.00	980	57	13.5	525-1000	1660	VI	No Valves	1.25-.375	1500	40	Ele
HERCULES																			
DOOB	TC	4-3 1/2 x 4 1/2	4	199	62-2600	53-2600	41-1800	14.50	750	91	18.3	143-1500	750	VI	1.62-.375	1.12-.375	1650	45	E-G
DOOC	TC	4-4x4 1/2	4	226	70-2600	60-2600	47-1800	14.50	750	91	15.9	162-1400	750	VI	1.62-.375	1.12-.375	1650	45	E-G
DOOD	TC	4-4 1/2 x 4 1/2	4	255	79-2600	66-2600	53-1800	14.50	750	91	14.2	180-1400	750	VI	1.62-.375	1.12-.375	1650	45	E-G
DJXB	TC	6-3 1/2 x 4 1/2	4	260	77-2600	66-2600	51-1800	14.50	750	86	17.2	178-1400	875	VI	1.62-.375	1.12-.375	1650	45	E-G
DJXC	TC	6-3 1/2 x 4 1/2	4	298	83-2600	71-2600	59-1800	14.50	750	87	14.8	208-1500	875	VI	1.62-.375	1.12-.375	1650	45	E-G
DWXC	TC	6-4x4 1/2	4	358	108-2400	92-2400	77-1800	14.50	750	95		265-1400		VI	1.68-.395	1.25-.395	1650	45	Ele
DWXD	TC	6-4 1/2 x 4 1/2	4	404	122-2400	104-2400	85-1800	14.50	750	93		299-1400		VI	1.68-.395	1.25-.395	1650	45	Ele
DRXB	TC	6-4 1/2 x 5 1/2	4	474	120-2000	102-2000	89-1600	14.50	750	93	16.1	350-1300	1435	VI	2.00-.395	1.37-.395	1650	45	E-G
DRXC	TC	6-4 1/2 x 5 1/2	4	529	133-2000	113-2000	88-1400	14.50	750	94	16.3	380-1400	1435	VI	2.00-.395	1.37-.395	1650	45	E-G
DHXB	TC	6-5x6	4	707	176-1800	150-1800	121-1400	14.50	750	97	20.7	530-1400	2500	VI	2.37-.500	1.62-.500	1650	45	E-G
DFXB	TC	6-5x6	4	707	177-1800	150-1800	121-1400	14.50	750	97	19.8	530-1400	2400	VI	2.37-.500	1.62-.500	1650	45	Ele
MACK																			
405	LE	6-4x5 1/2	4	405	197-2200	94-2200	65-1500(8)	14.60	840	85	26.3	308-1200	1710	VI	1.56-.418	1.50-.418	1400	46	Ele
ED	LE	6-4 1/2 x 5 1/2	4	519	133-2200	122-2200	80-1500(8)	14.57	840	82	22.8	381-1300	1823	VI	1.64-.500	1.64-.500	1700	46	Ele
END605	LE	6-4 1/2 x 6	4	605	144-2200	130-2000	100-1500(8)	14.63	840	87	19.8	455-1100	1980	VI	1.64-.500	1.64-.500	1700	46	Ele
WAUKESHA																			
VRZH	DI	4-4 1/2 x 5 1/2	4	353	59-1600	47-1600	39-1400	5.60	500	62	26.9	229-700	1050	VI	1.75-.450	1.50-.450	1200		E-H
6BKH	DI	6-3 1/2 x 4 1/2	4	282	83-2800	54-2500	41.5-1800	6.40	500	65	18.1	174-1400	750	VI	1.62-.375	1.25-.375	1200		E-H
140HS	DI	6-4 1/2 x 5 1/2	4	468	111-2250	89-2000	70-1500	5.80	500	79	20.0	342-1000	1400	VI	1.87-.531	1.37-.469	1200		Ele
140HK	DI	6-4 1/2 x 5 1/2	4	525	124-2250	101-2000	78-1500	5.80	500	78	18.5	383-1000	1440	VI	1.87-.531	1.37-.469	1200		Ele
145HS	DI	6-4 1/2 x 6	4	638	124-2000	98-1800	80-1400	5.60	500	71	24.4	434-800	1950	VI	1.87-.594	1.37-.531	1200		Ele
145HK	DI	6-5 1/2 x 6	4	779	150-2000	120-1800	99-1400	5.60	500	72	20.0	531-800	1980	VI	1.87-.594	1.37-.531	1200		Ele

1-Without fan or muffler
AC-Air Chamber

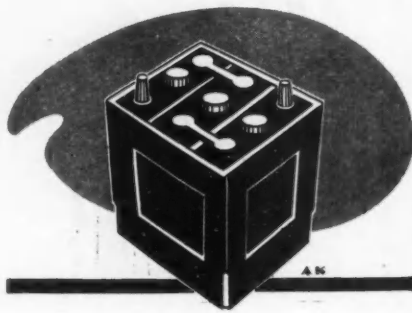
DI-Direct Ignition
E-G-Electric or Auxiliary Gasoline Engine

E-H-Electric or Hand
Ele-Electric

LE-Lanova Energy Cell
TC-Turbulence Chamber

• DIESEL FUEL TAXES •

STATE	State Gasoline Tax	State Diesel Fuel Tax	DIESEL TAX REMARKS	STATE	State Gasoline Tax	State Diesel Fuel Tax	DIESEL TAX REMARKS
Alabama	6	6	Same if used in motor vehicles on highways.	Nevada	4	5	Increase made effective July 1, 1939.
Arizona	5	5	Collected by seller.	New Hampshire	4	4	Same as gasoline tax.
Arkansas	6 1/2	6 1/2	Paid on use basis by operator.	New Jersey	3	3	Same as gasoline tax.
California	3	3	Same as gasoline tax.	New Mexico	5	5	Collected from licensed and bonded user direct.
Colorado	4	4	Same as gasoline if for use on highways.	New York	4	4	Same as gasoline tax.
Connecticut	3	3	Collected by distributor.	North Carolina	6	6	Same as gasoline tax.
Delaware	4	4	Same. Diesels pay twice the registration fee.	North Dakota	4	4	Same as gasoline tax.
Dist. of Col.	2	No	Diesel vehicles charged twice the registration fee.	Ohio	4	4	Same as gasoline tax.
Florida	7	7	Diesel tax made effective July 1, 1939.	Oklahoma	4	4	Same if used in motor vehicles on highways.
Georgia	6	6	Same if used in motor vehicles on highways.	Oregon	5	5	Diesels also charged higher license fee. Trucks, \$1.50 per 100 lb. light weight.
Idaho	5.1	5.1	Collected through oil companies.	Pennsylvania	4	4	Taxable if used in motor vehicles on highways.
Illinois	3	3	Collected from licensed distributor and user direct.	Rhode Island	3	3	Same as gasoline tax.
Indiana	4	4	Tax paid on sales basis if used on the highways.	South Carolina	6	6	Diesel fuel taxed by Act of 1940.
Iowa	3	3	Same as gasoline tax.	South Dakota	4	4	Same as gasoline tax.
Kansas	3	3	Collected by distributors, if for use on highways.	Tennessee	7	7	Effective February 15, 1941 on vehicles using the highways.
Kentucky	5	5	Paid by user if used in motor vehicles on highways.	Texas	4	4	Same as gasoline tax.
Louisiana	7	7	Paid by user if used in motor vehicles on highways.	Utah	4	4	Paid by user if used in motor vehicles on the highways.
Maine	4	No	No tax at present; legislation pending.	Vermont	4	No	Diesel vehicles charged twice the registration fee.
Maryland	4	4	Same as gasoline tax.	Virginia	5	5	Collected from licensed "User-Sellers" and "Users" direct.
Massachusetts	3	No	Diesels pay higher registration fee.	Washington	5	5	Same, plus 50% capacity license fee on gross weight.
Michigan	3	3	Collected by wholesale distributor or retail dealer from operator or owner of unit using the highways.	West Virginia	5	5	Same as gasoline when used on highways.
Minnesota	3	3	Diesel tax charge is made from reports from both seller and purchaser. Legislation pending to make tax 4 cents.	Wisconsin	4	4	Same as gasoline tax.
Mississippi	6	6	Same if used in motor vehicles on highways.	Wyoming	4	4	Same as gasoline tax when used on highways.
Missouri	2	2	Same if used in motor vehicles on highways.	FEDERAL	1 1/2	No	No diesel tax collected.
Montana	5	5	Paid by user if used in motor vehicles on highways.				
Nebraska	5	No	In addition to regular truck registration fee, diesel vehicles pay a special fee amounting to twice the registration fee.				



BATTERY DATA

TYPE AND CAPACITY BY TRUCK MODELS

TRUCK MAKE AND MODEL	BATTERY			
	Amp. Hr. Capacity	Number of Plates	Terminal	Grounded
AUTOCAR				
A, B, UA, UB, C10, U10, C20, U20, C30, U30	118	15	P	P
RM, RL, D, UD, UDD	135	17	P	P
DF, N, NF, DH, DS	152	19	P	P
UDF, UN, UNF, US	152	19	P	P
UT, 5UTR, 6X2UT, T, C, 6X2UT	135*	17	P	P
RMT, 1TR, 6X2RL, 1UTR, 6X2UD	118*	15	P	P
2TR, 3TR, 4TR	135*	17	P	P
2UTR, 3UTR, 4UTR	135*	17	P	P
RLD, DP, C40, C40D, U40, U40D	135	17	P	P
6X2DF, 6X2NF, 6X4DF	135*	17	P	P
6X2T, 6X4TO, 6X4TD, 6X4TC, 6X4S	135*	17	P	P
6X2UN, 6X2UNF, 6X4UTO, 6X4UTD	135*	17	P	P
4X4DF, 4X4N, 4X4NF	152	19	P	P
C10, U10, C20, U20, C30, U30	118	15	P	P
C10T, U10T, C20T, U20T, C30T, U30T	101*	13	P	P
DC10, DC10T, DU10, DU10T, DC20, DC20T, DU20, DU20T	135**	17	P	P
C40, U40, C40D, U40D, C50D, C40T, U40T, C4062, C4064, U4064, C50T	118*	15	P	P
DC50T	237*	25	P	P
C60, U60, U60D, C70, U70, C70D, C7044, C80, U80, C80D, U80D, C80T, U80T, C70T, U70T, C7062, U7062, C7064, U7064, C80T, U80T, C8044, C8062, U8062, C8064, U8064, C90, U90, C90T, U90T, C90D, U90D, C9044, C9062, U9062, C9064, U9064, DC100T, DU100T, DC100D, DC10044, DC10062, DU10062, DC10064, DU10064	152**	19	P	P
BROCKWAY				
78, 83, 88, 92, 94	118	15	P	P
112, 128, 146, 147, 152, 153, 154, 156, 162, 166	135	17	P	P
160X, 165X	135	17	P	P
170X, 175X, 195X, 220X	152	19	P	P
240X, 260X	118*	15	P	P
CHEVROLET				
All Trucks (1935-36)	90	15	N	N
(1937-38)	94	15	N	N
(1939)	95	15	N	N
(1940-41)	100	15	N	N
CORBITT				
12B, 13B, F12, 17B, F14, 14BT, 21B	101	13	P	P
26D, F23, F27, F35, 16BT, 22BT, 27BT	101	13	P	P
F18	101	17	P	P
DIAMOND T				
201 (Std.)	95	15	P	P
201 (Deluxe), 201C, 306, 306SC, 404, 404C, 404SC	100	13	P	P
406	110	17	P	P
509, 509C, 612, 612C, 614, 614C	118	15	P	P
702, 702C, 805, 805C, 806, 806C	152	19	P	P
900	200	25	P	P
DODGE				
RC, RD, TC, TD, VC, WC Series	90	13	P	P
RE, VD, TE, WD Series	95	15	P	P

FAST CHARGER SPECIFICATIONS

Name	Model	Price	Type	Timing Device	Cut-Off Switch	Charging Rate	Ammeter to Show Rate of Charge	Voltmeter to Show Battery Voltage	Rate of Charge at Start	Rate of Charge at Finish	Available in What Voltages	Available in What Cycles
Allen Electric & Equip. Co.												
Allen	F160	159.00	CS	M	Au	Ad	Y	Y	80 Max.	60	110, 220	25, 30, 50, 80
Allen	F50	87.50	CS	N	M	Ad	Y	Y	50 Max.	38	110, 220	25, 30, 50, 80
Baldor Electric Co.												
Handy Super Servicer	75	180.00	B	M	Au	Ad	Y	Y	70-75	6	115, 230	50, 80
Handy Battery Booster	30	89.50	B	M	Au	F	Y	Y	35-35	30	115, 230	50, 80
Benwood Linze Co.												
B-L	39/40	249.50	CO	M	Au	Ad	Y	Y	100 Max.	12-15	220	25, 60
B-L	200	199.50	CO	M	Au	Ad	Y	Y	100 Max.	12-15	110, 220	25, 60
B-L	100	98.50	B	M	Au	F	N	N	50	50	110	60
Electric Heat Control Co.												
King	FC-1	178.00	CS	M	Au	Ad	Y	Y	80 Max.	60	110, 220	60
W. D. Foreman												
Foreman Batt. Booster	A-75	147.50	MG	M	Au	F	Y	N	75	55	All	All
Foreman Batt. Booster	D-75	176.50	MG	M	Au	F	Y	N	75	55	All	All
General Electric Co.												
GE	Deluxe	325.00	CO	E	Au	Ad	Y	Y	20-100	15	110, 220	60
GE	Eighty	189.50	CO	B	Au	Ad	Y	Y	35-80	30-70	110, 220	80
GE	Booster	89.50	B	M	Au	F	Y	N	40	35-40	110, 220	60
Hunter Hartman Corp.												
Kwikurent Deluxe	372K	545.00	MG	M	Au	Ad	Y	Y	150 Max.	50	220, 440	Any cycle
Kwikurent Standard	365K	495.00	MG	M	Au	Ad	Y	Y	150 Max.	50	220, 440	Any cycle
Rocket	472R	265.00	CO	M	Au	Ad	Y	Y	100 Max.	72	110, 220	25, 50, 60
Bullet	465B	179.50	CS	M	Au	Ad	Y	Y	100 Max.	64	110	60
Marquette Mfg. Co.												
Marquette Hi-Rate	100 Amp.	198.00	CO	M	Au	Ad	Y	Y	100 Max.	60-70	110, 220	40, 50, 60
Marquette Hi-Rate	80 Amp.	179.50	CO	M	Au	Ad	Y	Y	80 Max.	50-60	110, 220	40, 50, 60
Mercury Battery Charger & Tester Corp.												
Mercury	Master	295.00	SE	M	Au	Ad	Y	Y-3	110 Max.	60	110, 220	25, 50, 60
Mercury	D-250	250.00	SE	M	Au	Ad	Y	Y-3	90 Max.	40	110, 220	25, 50, 60
Mercury	D-100	198.50	CO	M	Au	Ad	Y	Y	90 Max.	50	110, 220	25, 50, 60
Mercury	Comet	124.95	CS	M	Au	Ad	Y	N	75 Max.	40	110, 220	25, 50, 60
National Battery Co.												
Speedway	0694	197.50	CO	M	Au	Ad	Y	Y	100 Max.	60-70	110, 220	25, 60
Speedway	0693	179.50	CO	M	Au	Ad	Y	Y	80 Max.	50-60	110, 220	25, 60
Quick Charge, Inc.												
Quick Charge	80-A	198.50	CS	M	Au	Ad	Y	Y	80 Max.	50	115, 220	25, 60
Joseph Weidenhoff, Inc.												
Weidenhoff	555	188.50	CS	M	Au	Ad	Y	Y	80 Max.	25-30	110, 220	50, 60

Ad—Adjustable
Au—Automatic

B—Bulb
CO—Copper Oxide

CS—Copper Sulphide
E—Electrical

F—Fixed
M—Mechanical

MG—MotorGenerator
N—No

SE—Selenium
Y—Yes

TRUCK MAKE AND MODEL	BATTERY			
	Amp. Hr. Capacity	Number of Plates	Terminal	Grounded
DODGE—(Cont.)				
RF, VF, WF, VM, WFM Series	105	15	P	P
RG, RH, TG, TH, VG, VH, WG, WH, WGM, WHM Series	119	15	P	P
RL, RK, RO, RP, TL, TK, VL, VK, WL, WK Series	136	17	P	P
TLD, TKD, VLD, VKD, WLD, WKD	153**	19	P	P
FEDERAL				
7, 8, 9, 10, 11, 11H, 12, 14	100	13	P	P
15, 15H, 18H, 20H, 75	100	13	P	P
16, 17, 18, 20, 76, 77, 80	118	15	P	P
18, 20 (Late 1941)	135	17	P	P
25, 29, 25H, 29H, 35, 45	135	17	P	P
40, 40DR, 50, 50H	135	17	P	P
62, 63, 65, 66 (12-volt)	135*	17	P	P
C7, C7W, C8, C8W, C8H	135	17	P	P
75, 80, 75H, 80H	100	13	P	P
85, 89, 85H, 89H, 90, 92, 94	135	17	P	P
FORD				
1939	100	17	P	P

TRUCK MAKE AND MODEL	BATTERY			
	Amp. Hr. Capacity	Number of Plates	Terminal	Grounded
FORD—(Cont.)				
(1940-41)	120	17	P	P
FWD				
HS, HG, HM, HH6, SUA, SU, YU, MJ5, MJ6, M7, M10, MJ6X6, M6X6	153	19	P	P
GENERAL MOTORS				
T14 to T155, T16, T16H, T18, T18H	86	13	P	P
T23, T23H, T33, T33H, F23, F23H	115	15	P	P
F33, F33H, T46, F46	115	15	P	P
T61, T61H, F61, F61H	115	15	P	P
F16, F16H, F18, F18H	86	13	P	P
AC100, AC150, AC250, AC300, AC350, AC400, AC450, AF300, AF350, AF400, AF450, CC100, CC150, CC250, CC260, CC300, CC350, CC400, CC450, CF300, CF400, CF450	100	15	P	P
AC500, AF500, AC550, AF550, AC600, AF600, AC650, AF650, AC700, AF700, AC800, AF800, AC850, AF850	115	17	P	P

BATTERY DATA CONTINUED

TRUCK MAKE AND MODEL		BATTERY		
		Amp. Hrs. Capacity	Number of Plates	Terminal Grounded
GENERAL MOTORS—(Cont.)				
ADC500, ADC550, ADC600, ADC650, ADC700, ADC750, ADC800, ADC850 (12-volt)		280	25	P
ADF500, ADF550, ADF600, ADF650, ADF700, ADF750, ADF800, ADF850		200*	25	P
HUG				
98, 99, 99S, 44-4, 45-4, 46-4		153	19	N
D42, D43, D43L, D98, D99, D99S, 42W, 87W		153	19	N
15W, 19W, 83W, 85W		105	19	N
INTERNATIONAL				
K1, K2, K3, K4, K4S, K5, K5S		105	15	P
KENWORTH				
505, 506, 507, 511, 519, 521, 522, 523, 525, 526, 527, 528, 541, 542, 543, 544, 545		175*	21	P
553, 554, 555		175	21	P
538, 537, 538		140	19	P
		122	19	P
MARMON-HERRINGTON				
E5, E6, LD2, OT1, F5-4, F6-4, FF5-4, FF6-4, F5-6, F6-6, FF5-6, FF6-6, H5-4, H6-4, HH5-4, HH6-4, H5-6, H6-6, HH5-6, HH6-6, J5-4, J6-4, JJ5-4, JJ6-4, JJ5-6, JJ6-6, LD3-4, LLD3-4, LD4-4, LLD4-4, LD5-4, LLD5-4, OT2-4, OT3-4, OOT3-4, OT4-4, OOT4-4		100	17	P
C10-4, C20-4, C30-4, DSD100-4, DSD- 200-4, DSD200-4, DSD300-4, DSD- 300-6		120	17	P
C40-4, C50-4, DSD400-4, DSD400-6, DSD500-4, DSD500-6		141	17	P
C55-4, C55DR-4, C60-4, C60-6, C70-4, C70-6, DSD500-4, DSD550-DR4, DSD600-4, DSD600-6, DSD700-4, DSD700-6		116	15	P
C80-4, C80-6, DSD800-4, DSD800-6, DSD900-4, DSD900-6, DSD1000-4, DSD1000-6		120	13	P
		138	15	P
OSHKOSH				
All Models		120	17	N
REO				
450, 450L, 475, 475L, 650, 650L, 675, 675L, 1A4, 1C4		90	13	N
1A4H, 1C4H, 1B7M, 2B7M		90	13	N
1B4, 1D4, 1B4H, 1D4H, 2B4, 2D4, 2B4, 2D4, 2J5, 2H5, 1L5		90	13	N
2LM7, 2LMH7		240	25	N
		140	15	N
2L4, 2L4H, 2LC4		240	25	N
		140	15	N
19, 20		90	13	N
21		105	15	N
22, 23		136	17	N
4D19		204	25	P
6D19, D20		272*	33	P
STERLING				
FB50, FB60, FB70, FD70		140	21	P
FB90, FD90, FC90, FC95		140	21	P
FD97, FC100, FC115, FC135, FD140, HC140		158	23	P
HC185, HC200, HC250, HCS210		158*	23	P
FBT152, FWS152		140	21	P
FDS180		158	23	P
STEWART				
40A, 60A, 61A, 62A, 47A, 50A		117	15	P
38A, 49A, 61A, 58A, 59A		133	17	P
STUDEBAKER				
K5, L5, K10, K15, K15M		105	15	P
K20, K20M, K25, K25M		136	17	P
K20D		136**	17	P
K30, K30M		153	19	P
All Models (1941)		90	13	P
WHITE				
700, 704, 800, 802, 708, 510		105	15	P
704K		115	15	P
709, 710, 712		117	15	P
718		100	13	P
750, 750T		133	17	P
720, 720T, 820		136	17	P
722		114	13	P
805, 809, 810, 812, 818		117	15	P
WA14, WA18, WA20, WA22, WA26, WA34, WA114, WA118, WA120, WA122, WA126, WA134, WA2084, WA2264		119	15	P
White Horse		120	17	P
WILLYS				
All Models		80	13	N

TRANSMISSION SPECIFICATIONS

TRANSMISSION MAKE AND MODEL	Torque Rating	No. of Forward Speeds	Location	Type	Direct Drive On	GEAR RATIOS											Weight—Dry (Lb.)	Oil Capacity (Pts.)	Power Take-off Opening
						Low	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Reverse	Overdrive			
AUTOCAR																			
RL URL	350	5	Eng	Con	4	6.07	3.51	1.77	1.00	.78					7.80	.78	332	11	Yes
DF	350	5	Eng	Con	4	5.78	3.52	1.83	1.00	.72					7.23	.72	335	11	Yes
TF	450	5	Eng	Con	4	5.90	3.60	1.84	1.00	.75					7.37	.75	416	11	Yes
A-2		2	Eng		2	1.47	1.00										310	10	Yes
A-3						1.98	1.00									.725	298	10	Yes
BROWN-LIPE(1)																			
2321		2	Ams	Con		1.00										.75	105	4	Yes
2323		2	Ams	Con	2	1.58	1.00										105	4	Yes
3221		2	Ams	Con		1.00										.70	133	7	No
3222		2	Ams	Con	2	2.15	1.00										133	7	No
5222		2	Ams	Con	2	2.34	1.00										190	8	No
5531		3	Ams	Con	2	2.00	1.00									.72	145	6	Yes
6031		3	Ams	Con	2	2.14	1.00									.69	210	10	Yes
703		3	Ams	Cla	2	2.62	1.00									.747	355	8½	Yes
2341		4	Eng	CC	4	6.34	3.28	1.65	1.00						7.92		138	5½	Yes
2541		4	Eng	CC	4	6.34	3.28	1.65	1.00						7.92		138	5½	Yes
3341		4	Eng	CC	4	6.30	3.51	1.88	1.00						7.29		230	8½	Yes
3440		4	Eng	CC	3	3.87	1.86	1.00							4.48	.73	230	8½	Yes
5341		4	Eng	CC	4	6.63	3.20	1.70	1.00						7.53		327	8	Yes
6241		4	Eng	CC	4	6.63	3.19	1.70	1.00						7.53		342	11	Yes
6440		4	Eng	CC	3	3.90	1.88	1.00							4.43	.75	342	11	Yes
7441		4	Eng	CC	4	6.27	3.45	1.73	1.00						8.15		479	18	Yes
7641		4	Eng	CC	4	5.24	2.89	1.71	1.00						6.81		479	18	Yes
7640		4	Eng	CC	3	3.72	2.06	1.00							4.84	.77	479	18	Yes
2452		5	Eng	CC	5	7.12	4.20	2.33	1.66	1.00					7.45		175	9	Yes
2453		5	Eng	CC	4	6.12	3.62	2.00	1.00						6.40	.79	175	9	Yes
3352		5	Eng	CC	5	7.83	4.58	2.47	1.46	1.00					7.93		290	10	Yes
3353		5	Eng	CC	4	6.54	3.77	1.92	1.00						6.54	.77	290	10	Yes
5351		5	Eng	CC	4	6.63	3.20	1.70	1.00						7.53	.74	420	12	Yes
5352		5	Eng	CC	5	7.70	4.85	2.56	1.43	1.00					7.80		420	12	Yes
7451		5	Eng	CC	4	6.27	3.45	1.73	1.00						8.15	.67	587	26	Yes
7651		5	Eng	CC	4	5.24	2.89	1.71	1.00						6.81	.69	587	26	Yes
3481		8	Eng	CC	7	8.31	4.90	3.87	2.15	1.86	1.57	1.00			(a)	.73	375	11	Yes
7481		8	Eng	CC	7	8.48	4.65	3.72	2.28	2.04	1.76	1.00			(b)	.77	680	26	Yes
CHEVROLET																			
9141-¾ & ¾ Ton	200	3	Eng	SC	3	2.94	1.68	1.00							2.84		48	1½	No
1941-1 & 1½ Ton	200	4	Eng	Cla	4	7.06	3.48	1.71	1.00						6.98		90	5½	Yes
CLARK																			
141-T	Var	3	Eng	CC	3	3.46	1.71	1.00							4.25		85	3½	Yes
170FS	Var	4	Eng	Cla	4	6.57	3.58	1.73	1.00						7.88		140	8	Yes
185-F	Var	4	Eng	CC	4	6.35	3.31	1.73	1.00						7.54		140	8	Yes
200-V	Var	5	Eng	CC	5	7.58	4.38	2.40	1.48	1.00					6.11		200	12	Yes
200-VO	Var	5	Eng	CC	4	6.08	3.50	1.91	1.00						4.87	.799	200	12	Yes
205-V	Var	5	Eng	CC	5	7.58	4.38	2.40	1.48	1.00					7.51		205	12	Yes
205-VO	Var	5	Eng	CC	4	6.08	3.50	1.91	1.00						6.00	.799	205	12	Yes
230-F	Var	4	Eng	CC	4	5.00	3.07	1.71	1.00						5.83		195	11	Yes
270-V	Var	5	Eng	CC	5	7.88	4.48	2.63	1.48	1.00					7.88		290	20	Yes
270-VO	Var	5	Eng	CC	4	7.00	3.97	1.90	1.00						7.00	.788	290	20	Yes
325-V	Var	5	Eng	CC	5	8.05	4.34	2.80	1.67	1.00					8.05		380	24	Yes
325-VO	Var	5	Eng	CC	4	7.08	3.82	1.85	1.00						7.08	.768	380	24	Yes
FORD																			
Used on 11D, 11Y, IND, INY, 191W, 118T, 198T																			
19T, 11W, 19W, 111W		4	Eng	Cla	4	6.40	2.09	1.69	1.00						7.82			5	Yes
Used on 11D, 11Y, INC.		3		SC	3	3.53	1.90	1.00							4.00			2½	No
Used on 11C		3		Con	3	2.82	1.60	1.00							3.62			2½	No
F. W. D.																			
U	Var	5	Ams	Con	5	9.95	5.83	3.15	1.85	1.00					8.95		986*	32	Yes
M	Var	10	Ams	Con	10	15.33	9.28	5.73	3.06	2.10	7.30	4.42	2.73	1.47	(d)		1638*	28	Yes
FULLER																			
AR-163	Var	2	Ams	CC	2	1.83	1.00								None		120	8	No
UR-163	Var	2	Eng	CC	2	1.83	1.00								None		152	8	No
2-A-62	Var	2	Ams	Con	2	1.58	1.00								None		165	8	No
2-A-62	Var	2	Ams	Con	2	2.00	1.00								None		165	8	No
2-B-62	Var	2	Ams	Con	2	1.33	1.00								None		165	8	No
2-A-86	Var	2	Ams	Con	2	2.27	1.00								None		240	14	No
2-B-86	Var	2	Ams	Con	2	1.32	1.00								None		240	14	No
3-A-86	Var	3	Ams	Con	2	1.99	1.00								None	.77	340	17	Yes
3-B-86	Var	3	Ams	Con	2	1.24	1.00								None	.848	340	17	Yes
3-C-86	Var	3	Ams	Con	2	1.35	1.00								None	.74	340	17	Yes
4-A-86	Var	4	Eng	CC	4	6.54	3.27	1.76	1.00						7.24		420	22	Yes
4-A-860	Var	4	Eng	CC	3	3.72	1.86	1.00							4.12	.76	420	22	Yes
4-AM-86	Var	4	Ams	CC	4	6.54	3.27	1.76	1.00						7.24		370	22	Yes
4-AM-860	Var	4	Ams	CC	3	3.72	1.86	1.00							4.12	.76	370	22	Yes
4-B-86	Var	4	Eng	CC	4	5.55	3.27	1.76	1.00						6.58		420	22	Yes
4-BM-86	Var	4	Ams	CC	4	5.55	3.27	1.76	1.00						6.58		370	22	Yes
5-A-33	Var	5	Eng	CC	5	7.53	4.30	2.52	1.42	1.00					7.37		210	12	Yes
5-A-330	Var	5	Eng	CC	5	6.10	3.48	1.79	1.00						5.96	.768	210	12	Yes

*Each for 2 units.

****Each for 4 units.**

CONTINUED ON NEXT PAGE

Transmission Specifications

(Continued from page 53)

TRANSMISSION MAKE AND MODEL	Torque Rating	No. or Forward Speeds	Location	Type	GEAR RATIOS										Weight—Dry (Lb.)	Oil Capacity (Pts.)	Power Take-off Opening
					Direct Drive On	Low	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Reverse	Overdrive	
5-B-33	Var	5	Eng	CC	5	7.53	4.30	2.52	1.42	1.00					7.37		Yes
5-B-330	Var	5	Eng	CC	4	6.10	3.48	1.79	1.00						5.96	.768	Yes
5-F-33	Var	5	Eng	CC	5	7.53	4.30	2.52	1.42	1.00					7.37		Yes
5-F-330	Var	5	Eng	CC	4	6.10	3.48	1.79	1.00						5.96	.768	Yes
5-G-33	Var	5	Eng	CC	5	7.53	4.30	2.52	1.42	1.00					7.37		Yes
5-G-330	Var	5	Eng	CC	4	6.10	3.48	1.79	1.00						5.96	.768	Yes
5-M-33	Var	5	Eng	CC	5	7.53	4.30	2.52	1.42	1.00					7.37		Yes
5-M-330	Var	5	Eng	CC	4	6.10	3.48	1.79	1.00						5.96	.768	Yes
5-A-43	Var	5	Eng	CC	5	8.03	4.61	2.46	1.41	1.00					(e)	.330	Yes
5-A-430	Var	5	Eng	CC	4	6.52	3.33	1.77	1.00						(f)	.771	Yes
5-F-43	Var	5	Eng	CC	5	8.03	4.61	2.46	1.41	1.00					(e)	.340	Yes
5-F-430	Var	5	Eng	CC	4	6.52	3.33	1.77	1.00						(r)	.771	Yes
5-M-43	Var	5	Eng	CC	5	8.03	4.61	2.46	1.41	1.00					(e)	.280	Yes
5-M-430	Var	5	Eng	CC	4	6.52	3.33	1.77	1.00						(f)	.771	Yes
5-A-62	Var	5	Eng	CC	5	8.08	4.67	2.62	1.38	1.00					(g)	.370	Yes
5-A-620	Var	5	Eng	CC	4	7.07	3.50	1.72	1.00						(h)	.776	Yes
5-F-62	Var	5	Eng	CC	5	8.08	4.67	2.62	1.38	1.00					(g)	.385	Yes
5-F-620	Var	5	Eng	CC	4	7.07	3.50	1.72	1.00						(h)	.776	Yes
5-M-62	Var	5	Eng	CC	5	8.08	4.67	2.62	1.38	1.00					(g)	.320	Yes
5-M-620	Var	5	Eng	CC	4	7.07	3.50	1.72	1.00						(h)	.776	Yes
8-A-86	Var	8	Eng	CC	8	14.83	7.42	6.54	3.99	3.27	2.27	1.76	1.00		(k)	.650	Yes
8-A-860	Var	8	Eng	CC	7	8.44	4.22	3.72	2.27	1.86	1.72	1.00			(m)	.76	Yes
8-AM-86	Var	8	Eng	CC	8	14.83	7.42	6.54	3.99	3.27	2.27	1.76	1.00		(k)	.550	Yes
8-AM-860	Var	8	Eng	CC	7	8.44	4.22	3.72	2.27	1.86	1.72	1.00			(m)	.76	Yes
8-B-86	Var	8	Eng	CC	8	12.56	7.42	5.55	3.99	3.27	2.27	1.76	1.00		(o)	.650	Yes
8-B-860	Var	8	Eng	CC	7	7.14	4.22	3.15	2.27	1.86	1.72	1.00			(p)	.76	Yes
8-BM-86	Var	8	Eng	CC	8	12.56	7.42	5.55	3.99	3.27	2.27	1.76	1.00		(o)	.550	Yes
8-BM-860	Var	8	Eng	CC	7	7.14	4.22	3.15	2.27	1.86	1.72	1.00			(p)	.76	Yes
8-C-86	Var	8	Eng	CC	8	8.63	6.54	4.32	3.27	2.32	1.76	1.32	1.00		(q)	.650	Yes
8-C-860	Var	8	Eng	CC	6	4.91	3.72	2.46	1.86	1.32	1.00				(r)	.650	Yes
8-D-86	Var	8	Eng	CC	8	7.33	5.55	4.32	3.27	2.32	1.76	1.32	1.00		(s)	.650	Yes
8-D-860	Var	8	Eng	CC	6	4.16	3.15	2.45	1.86	1.32	1.00				(t)	.650	Yes
INTERNATIONAL																	
HDS		3		SC	3	3.05	1.48	1.00							3.70		No
HDS-A		3		SC	3	3.05	1.48	1.00							3.70		No
H-41		4		SC	4	6.40	3.09	1.69	1.00						7.82		Yes
WARNER																	
T9A	180	4	Eng		4	5.90	3.09	1.69	1.00						7.21	129	Yes
T9	165	4	EA		4	6.40	3.09	1.69	1.00						7.82	98	Yes
T89	150	3	Eng	Con	3	3.58	1.83	1.00							4.25	110	No
T89	150	3	Eng	SC	3	3.58	1.83	1.00							4.25	110	No

*—Includes transfer

†—With clutch housing and brake band assemblies

‡—With brake band assembly, companion flange, brake drum and lever

(1)—Spicer Manufacturing Co.

(a)—9.62 and 4.48 to 1

(b)—10.95 and 4.84 to 1

(c)—10.03 and 4.78 to 1

(d)—8.00 and 4.71 to 1

(f)—6.50 and 3.33 to 1

(g)—8.12 and 4.74 to 1

(k)—16.42 and 7.24 to 1

(m)—9.32 and 4.12 to 1

(o)—14.92 and 6.58 to 1

(p)—8.48 and 3.74 to 1

(g)—7.24 and 9.56 to 1

(r)—5.44 and 4.12 to 1

(s)—8.68 and 6.58 to 1

(t)—4.94 and 3.74 to 1

(u)—.86 and .65 to 1

Ams—Amidship

CC—Constant Mesh and Clash

Cla—Clash

Con—Constant Mesh

EA—On Engine or Amidship, optional

Eng—Unit with Engine

SC—Synchronizing Clutches

Var—Varies

TRAILER REGISTRATIONS

(As of December 31, 1940 and 1939.)

	Trailers and Semi-Trailers			Trailers and Semi-Trailers	
	1940	1939		1940	1939
Alabama	4,625	4,574	Nebraska	44,000	43,473
Arizona	4,925	4,628	Nevada	1,510	1,381
Arkansas	11,000	10,707	New Hampshire	6,086	5,708
California	167,917	155,316	New Jersey	8,089	7,679
Colorado	1,703	1,574	New Mexico	3,129	2,762
Connecticut	6,012	5,951	New York	51,251	46,845
Delaware	3,339	3,047	North Carolina	45,000	44,882
District of Columbia	950	788	North Dakota	1,162	984
Florida	20,000	18,793	Ohio	135,000	134,174
Georgia	15,009	13,617	Oklahoma	7,589	14,757
Idaho	21,953	21,513	Oregon	(3)	(3)
Illinois	29,349	24,966	Pennsylvania	33,197	30,738
Indiana	72,000	71,584	Rhode Island	1,130	686
Iowa	95,932	(1) 98,292	South Carolina	3,860	5,598
Kansas	5,588	5,795	South Dakota	23,391	21,821
Kentucky			Tennessee	(3)	(3)
Louisiana	15,204	13,673	Texas	55,666	54,514
Maine	11,000	(2) 10,658	Utah	638	558
Maryland	5,520	4,641	Vermont	2,315	2,026
Massachusetts	16,212	14,585	Virginia	12,244	9,877
Michigan	161,017	154,262	Washington	23,400	20,882
Minnesota	90,168	42,175	West Virginia	3,621	3,382
Mississippi	5,073	4,149	Wisconsin	5,900	5,783
Missouri	38,632	34,317	Wyoming	10,349	10,795
Montana	6,171	4,195	Total	1,287,734	1,193,085

(1)—Includes 68,985 light trailers registered without charge.

(2)—Includes light trailers and commercial semi-trailers. Full trailers included with trucks.

(3)—Included with trucks.

1940

ACCIDENT DATA

(Compiled by The Travelers)

WEATHER CONDITIONS PREVAILING

	Fatal Accidents	Per Cent	Non-Fatal Accidents	Per Cent
Clear	26,940	85.8	748,520	82.6
Fog	660	2.1	13,590	1.5
Rain	3,050	9.7	111,470	12.3
Snow	750	2.4	32,620	3.6
Total	31,400	100.0	906,200	100.0

ROAD CONDITIONS PREVAILING

	Fatal Accidents	Per Cent	Non-Fatal Accidents	Per Cent
Dry	24,400	77.7	643,400	71.0
Wet	4,840	15.4	161,300	17.8
Snowy	610	2.6	30,810	3.4
Icy	1,350	4.3	70,690	7.8
Total	31,400	100.0	906,200	100.0

DAYS OF OCCURRENCE OF ACCIDENTS—1940

	Persons Killed	Per Cent	Persons Injured	Per Cent
Sunday	7,140	20.4	237,600	18.0
Monday	4,480	12.8	171,600	13.0
Tuesday	3,780	10.8	153,120	11.6
Wednesday	4,060	11.6	163,680	12.4
Thursday	4,130	11.8	170,280	12.9
Friday	4,690	13.4	182,160	13.8
Saturday	6,720	19.2	241,560	18.3
Total	35,000	100.0	1,320,000	100.0

ROAD LOCATION OF ACCIDENTS

	Persons Killed	Per Cent	Persons Injured	Per Cent
Between intersections	10,150	29.0	477,160	36.1
Rural intersections	1,300	3.7	33,000	2.5
Highway	9,930	28.4	163,680	12.4
Driveway	390	1.1	22,440	1.7
Curve	3,320	9.5	50,160	3.8
Street intersections	7,140	20.4	548,520	41.6
Railroad crossing	2,070	5.9	7,880	.6
Bridge	700	2.0	17,160	1.3
Total	35,000	100.0	1,320,000	100.0

DIRECTION OF TRAVEL

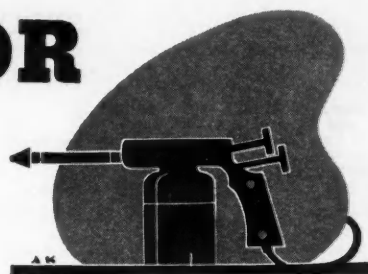
	Persons Killed	Per Cent	Persons Injured	Per Cent
Going straight	29,200	83.4	992,680	75.2
Turning right	450	1.3	30,360	2.3
Turning left	1,330	3.8	91,080	6.9
Backing	320	.9	21,120	1.6
Skidding	2,070	5.9	59,400	4.5
Car parked or standing still	910	2.6	62,040	4.7
Slowing down or stopping	520	1.5	59,400	4.5
Miscellaneous	200	.6	3,940	.3
Total	35,000	100.0	1,320,000	100.0

COMMERCIAL CAR JOURNAL
APRIL, 1941

SPECIFICATIONS FOR

PREPARING SURFACES FOR

PAINTING



Here for the first time Commercial Car Journal presents the recommendations of the various paint manufacturers for the preparation of and undercoat application on the 11 types of surface which the truck fleet painter encounters.

The four stages of preparation and undercoat application—cleaning, surface treatment, priming and surfacing—take the painter up to the application of the color coat. From that point on the process is uniform or, at least, it presents fewer problems than the earlier steps.

In the early steps various materials are used on the different surfaces. These are so varied that it is next to impossible for a painter to remember them all. This chart, therefore, is a substitute for fallible memory, and a definite guide to the correct materials for particular applications.

Surface to be Painted and Recommending Manufacturer	CLEANER		SURFACE TREATMENT		PRIMER		SURFACER	
	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time
ALUMINUM								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Zinc Chromate Primer-Surfacer (PS-21)	4 hr.	None	None
DuPont	Rust Remover		Wash with water.		Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	Kleenite		None		Zinc Chromate Primer	1/2 hr.	Nepto-Namel Surfer	ON
Pittsburgh Plate Glass	90-102 Mimax Surface Cleaner	5 min.	Phosphoric Acid Type Cleaner		29-50 Lavax Gray Primer Surfer	1/2-1 hr.	29-50 Lavax Primer Surfer	1 hr.
Sewall	982 Metal Cleaner	5 min.	Roughen	None	1861 Specification Metal Primer—P-27 Zinc Chromate aircraft aluminum primer	1-1 1/2 hr.	1854 Fleet Undercoat	2 hr.
Sherwin-Williams	Naphtha		Metal Prep	Wipe Dry	Kem Primers 43800 Series	4 hr.†	Kem Surfacer 43820 Series	18 hr.
CADMIUM PLATE								
Ditzler	Scouring Powder	None	Ditzler Wax and Grease Remover (Z-414)	None	Ditzco Clear Finish (Z-340)	ON	None	None
DuPont	Naphtha		Thorough Sand with 150	None	Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	None	None	None	None	None	None
Pittsburgh Plate Glass	None	None	Metal-prep 610 or 2% acetic acid solution		29-55 Lavax Metal Primer (Zinc dust type)	4-6 hr.	29-50 Lavax Primer Surfer	1 hr.
Sewall	None	None	None	None	None	None	None	None
Sherwin-Williams	Naphtha		Metalprep	Wipe Dry	Kem Primers 43800 Series	4 hr.†	Kem Surfacer 43820 Series	18 hr.
CANVAS								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzler Canvas Sealer (Z-498)	ON	None	None
DuPont	Naphtha		None		475-6402 Gray Wood Primer	24 hr.	None	None
Lowe Bros.	None	None	Size and Stretch		White lead and oil	24-48 hr.	None	None
Pittsburgh Plate Glass	Solvent Wash		None	None	Tector	ON	None	None
Sewall	Water Wash		None	None	LX14	1 hr.	1852 Sewall Undercoat	2 hr.
Sherwin-Williams	Naphtha		None	None	Kem Canvas Sealer 03316	24 hr.	None	None
MASONITE								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Masonite Primers PS-57 Gray, PS-58 Red	4 hr.	None	None
DuPont	Naphtha		Slight Sand		Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	None	None	Nepto-Namel-Primer-Surfacer C-7449	4-5 hr.	None	None
Pittsburgh Plate Glass	None	None	Sand with production paper	None	29-54 Lavax Wood Primer	ON	29-50 Lavax Primer Surfer	1 hr.
Sewall	Sandpaper	None	None	None	1854 Fleet Undercoat thinned for primer coat	1 hr.	1854 Fleet Undercoat thinned for surfacer coat	4 hr.
Sherwin-Williams	Naphtha		Kem Clear Sealer 06025	1 hr.	Kem Primers 43800 Series	4 hr.	Kem Surfacer 43820 Series	18 hr.
OLD FINISH								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Primer Surfacer	4 hr.	None	None
DuPont	Prep-sol		Sand with water.		Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	Kleenite		Sand	None	Nepto-Namel-Primer-Surfacer C-7449	4-5 hr.	None	None
Pittsburgh Plate Glass	90-102 Mimax Surface Cleaner	5 min.	Sand with 280-A sandpaper and water		29-50 Lavax Gray Primer-Surfacer	1/2-1 hr.	29-50 Lavax Primer-Surfacer	1 hr.
Sewall	658 Kleen-off liquid or 769 Ex Wax	5 min.	Sand	None	1854 Fleet Undercoat Thinned for Prime	15 min.	1854 Fleet Undercoat or E-43 Surfer	1 hr.
Sherwin-Williams	Sher-Will-Clean 02996	None	Sand	None	Kem Primers 43800 Series	4 hr.†	Kem Surfacer 43820 Series	18 hr.
PRIME								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	Sand	None	None	None	Ditzco Primer-Surfacer	4 hr.
DuPont	Prep-sol		Slight Sand		None	None	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	Wet sand and wipe		None	None	Nepto-Namel Surfer C-10722	ON
Pittsburgh Plate Glass	90-102 Mimax Surface Cleaner	5 min.	Sand with 320-A sandpaper and water		None	None	29-50 Lavax Primer Surfer	1 hr.
Sewall	769 Ex Wax	5 min.	Sand	None	Metal Primer	4 hr.	1854 Fleet Undercoat	4 hr.
Sherwin-Williams	Naphtha		Sand	None	Kem Primers 43800 Series		Kem Surfacer 43820 Series	18 hr.
PAINT GRIP								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Primer-Surfacer	4 hr.	None	None
DuPont	Naphtha		None	None	Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	V M P Naphtha	None	None	None	Nepto-Namel-Primer-Surfacer	4-5 hr.	Nepto-Namel Surfer C-10722	ON

CONTINUED ON NEXT PAGE

SPECIFICATIONS FOR PAINTING (Continued)

Surface to be Painted and Recommending Manufacturer	CLEANER		SURFACE TREATMENT		PRIMER		SURFACER	
	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time	Brand Name and Symbol	Drying Time
PAINT GRIP—Cont'd Pittsburgh Plate Glass	90-102 Mimax Surface Cleaner	5 min.	None	None	29-50 Lavax Gray Primer Surfacers	1/4-1 hr.	29-50 Lavax Primer Surfacers	1 hr.
Sewall	982 Metal Cleaner	5 min.	Roughen	None	1854 Fleet Undercoat	2 hr.	1854 Fleet Undercoat	4 hr.
Sherwin-Williams	Naphtha		None	None	Kem Primers 43800 Series	4 hr.†	Kem Surfacers 43820 Series	18 hr.
PLYWOOD								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Wood Preserver and Sealer (Z-707)	1 hr.	Ditzco Primer-Surfacers	4 hr.
DuPont	Naphtha		Slight Sand		RK-3037 Clear Wood Primer	Wipe in 15 min.	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	Sand	None	Oil Primer C-10719	ON	Nepto-Namel C-10722	ON
Pittsburgh Plate Glass	None	None	Sand with production paper	None	29-54 Lavax Wood Primer	ON	29-50 Lavax Primer-Surfacers	1 hr.
Sewall	Sand	None	None	None	X75 Wood Sealer	4 hr.	1854 Fleet Undercoat	4 hr.
Sherwin-Williams	None	None	Kem Clear Sealer 06025	1 hr.	Kem Primers 43800 Series	4 hr.†	1848 Paste Undercoat	4 hr.
							Kem Surfacers 43820 Series	18 hr.
STEEL								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	Ditzler Rust Remover and Metal Cleaner (Z-453)	None	Ditzco Primer-Surfacers	4 hr.	None	None
DuPont	Sand with Rust Remover V M P Naphtha	None	Wash with Water	None	Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	None	None	Nepto-Namel Primer-Surfacers C-7449	4-5 hr.	Nepto-Namel Surfacers C-10722	ON
Pittsburgh Plate Glass	90-102 Mimax Surface Cleaner	5 min.	Phosphoric Acid Type Cleaner	None	29-50 Lavax Gray Primer Surfacers	1/4-1 hr.	29-50 Lavax Primer-Surfacers	1 hr.
Sewall	982 Metal Cleaner	5 min.	Sand bright	None	1854 Fleet Undercoat	2 hr.	1854 Fleet Undercoat	4 hr.
Sherwin-Williams	Ditzler Wax and Grease Remover (Z-214)	None	Metal-Prep	Wipe Dry	Kem Primers 43800 Series	4 hr.†	1848 Paste Undercoat	4 hr.
							Kem Surfacers 43820 Series	18 hr.
WOOD								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	None	None	Ditzco Wood Preserver and Sealer (Z-707)	1 hr.	Ditzco Primer-Surfacers	4 hr.
DuPont	Naphtha		Slight Sand		RK-3037 Clear Wood Primer	Wipe in 15 min.	Preparakote (High Solids)	4 hr.*
Lowe Bros.	None	None	Sand	None	Oil Primer C-10719	ON	Nepto-Namel Surfacers C-10722	ON
Pittsburgh Plate Glass	None	None	Sand with Production Paper	None	29-54 Lavax Wood Primer	ON	29-50 Lavax Primer-Surfacers	1 hr.
Sewall	Sand	None	None	None	3300 Line Oil Primer		1854 Fleet Undercoat	4 hr.
Sherwin Williams	None	None	Kem Clear Sealer 06025	1 hr.	Kem Primers 43800 Series	4 hr.†	1848 Paste Undercoat	4 hr.
							Kem Surfacers 43820 Series	18 hr.
ZINC COATED								
Ditzler	Ditzler Wax and Grease Remover (Z-414)	None	Ditzler Rust Remover and Metal Cleaner (Z-453)	None	Ditzco Zinc Primer (Z-659)	1/4-1/2 hr.	Ditzco Primer Surfacers	4 hr.
DuPont	Naphtha		Sand with 150 sandpaper		Preparakote (High Solids)	4 hr.*	Preparakote (High Solids)	4 hr.*
Lowe Bros.	Galvaprep or Lithoform		Wash with water		Nepto-Namel Primer-Surfacers C-7449	4-5 hr.	Nepto-Namel Surfacers C-10722	ON
Pittsburgh Plate Glass	None	None	Copper Sulphate Wash	5 min.	29-55 Lavax Metal Primer (Zinc dust type)	4-6 hr.	29-50 Lavax Primer-Surfacers	1 hr.
Sewall	982 Metal Cleaner	5 min.	Copper Sulphate Wash	5 min.	1854 Fleet Undercoat	2 hr.	1854 Fleet Undercoat	4 hr.
Sherwin-Williams	Naphtha		Galvaprep or Lithoform		G & G Primer 26348	24 hr.	Kem Surfacers 43820 Series	18 hr.

ON—Over night

*—4 hr.—Dry Sand; 15 hr.—Water Sand

†—Can be coated with Surfacers after 1 hr.

FLEETS BY SIZES AND STATES

These figures are based on fleets operating eight or more TRUCKS.

In addition, these fleets operate over half a million passenger cars.

	8-9 Fleets	10-24 Fleets	25-49 Fleets	50-99 Fleets	100 & Over Fleets	Total Fleets	Trucks		8-9 Fleets	10-24 Fleets	25-49 Fleets	50-99 Fleets	100 & Over Fleets	Total Fleets	Trucks
Alabama	52	108	38	15	8	221	6,867	South Carolina	49	96	32	6	8	191	6,258
Arizona	15	44	9	10	3	81	3,860	South Dakota	12	31	4	3	3	53	1,251
Arkansas	27	68	14	8	5	122	3,108	Tennessee	78	165	64	22	19	348	10,685
California	247	744	299	162	131	1,584	82,867	Texas	166	493	156	94	34	945	32,495
Colorado	57	128	41	19	14	259	8,507	Utah	32	53	24	12	8	129	4,293
Connecticut	111	263	100	19	15	508	14,237	Vermont	16	17	7	4	4	47	1,262
Delaware	13	46	14	9	5	87	2,427	Virginia	80	175	57	23	18	353	11,063
Dist. of Columbia	43	74	45	19	28	209	80,432	Washington	103	199	61	34	22	419	13,241
Florida	73	197	88	28	9	395	9,731	West Virginia	62	144	32	12	19	269	8,586
Georgia	78	152	48	28	26	332	14,326	Wisconsin	122	323	111	52	21	629	16,523
Idaho	10	23	8	3	4	48	1,644	Wyoming	9	22	11	2	2	46	1,216
Illinois	394	927	265	112	112	1,810	74,301	TOTALS	5,233	11,942	3,957	1,822	1,317	24,271	958,492
Indiana	190	398	117	48	20	773	19,647								
Iowa	68	215	62	19	10	374	8,997								
Kansas	70	147	40	9	10	276	6,532								
Kentucky	57	129	43	15	13	257	11,526								
Louisiana	83	220	65	36	12	416	10,329								
Maine	26	64	19	6	4	119	2,737								
Maryland	89	198	72	26	24	409	13,433								
Massachusetts	280	657	183	73	51	1,244	37,646								
Michigan	300	574	190	104	80	1,248	45,487								
Minnesota	75	238	89	63	21	486	17,538								
Mississippi	28	66	16	6	8	124	3,861								
Missouri	133	349	114	74	41	711	24,592								
Montana	25	48	16	8	6	103	4,034								
Nebraska	38	92	34	14	12	190	6,719								
Nevada	6	11	8	3	1	27	1,809								
New Hampshire	12	46	10	3	4	75	1,968								
New Jersey	250	601	153	89	42	1,135	33,046								
New Mexico	9	17	9	2	4	41	1,647								
New York	587	1,102	406	197	187	2,479	138,529								
North Carolina	57	170	65	20	13	325	16,035								
North Dakota	17	21	7	3	2	50	1,155								
Ohio	399	711	241	120	92	1,563	51,101								
Oklahoma	37	149	61	25	17	299	10,666								
Oregon	35	118	46	17	12	228	8,729								
Pennsylvania	464	991	331	131	104	2,021	67,111								
Rhode Island	49	118	30	16	10	223	5,730								

Vocational Breakdown of Commercial Car Journal Fleet List

	Fleets	Trucks
Bakeries, Candies, Florists	1,485	63,342
Bottlers, Breweries	930	24,046
Coal Dealers, Mineral Mines	1,041	16,297
Contractors, Builders	2,457	50,776
Dairy Products, Milk, Ice Cream	1,485	62,583
Department Stores, Furniture	417	11,020
Flour, Feed, Grains	140	3,433
Government, State, County, Municipal	2,060	239,902
Ice Dealers, Manufacturers	575	15,011
Laundries, Cleaners, Dyers	1,556	34,766
Manufacturers, Steel Mills	837	17,489
Meats, Fish	670	17,489
Motor Freight-Local, Inter- and Intra-State	5,301	176,313
Newspapers, Publishers	137	4,988
Paints, Chemicals, Drugs	1,224	3,723
Petroleum Products	1,224	79,045
Public Utilities, Railroads	1,210	79,545
Farmers, Vegetables, Chain Stores	1,517	39,789
Miscellaneous	1,059	23,851
TOTAL	24,271	958,492

Line Number	MAKE AND MODEL	WHEEL-BASE		TIRE SIZES		ENGINE DETAILS				TRANS-MISSION		REAR AXLE		FRONT AXLE		BRAKES				FRAME							
		Minimum	Maximum	Standard	Maximum (Dual rear S-single rear)	Chassis Weight (See definition)	Model	No. of Cylinders	Displacement	Comp. Ratio	Torque lb. ft.	H.P. at R.P.M.	Number and Main Bearings	Governor Standard	Make and Model	Forward Sps	Make and Model	Drive & Type	Gear Ratio in High	Make and Model	Make Location	Drum Area	Drum Material	Hand Location	C-A Dimension (Min. Std. W. B.)	Side Rail Dimensions	Type
1	Avall (3)	1370	1500	1500	1500	11500	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	60	10x3	L
2	Avall	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
3	C-250	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
4	C-350	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
5	C-400	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
6	C-450	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
7	C-500	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
8	C-550	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
9	C-600	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
10	C-650	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
11	C-700	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
12	C-750	1520	1600	1600	1600	12600	Wau BL	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	304	422	TX	60	10x3	L
13	Bantam	349	75	1700	850	400/158	Own	4.2	26.3	10.5	60	7-3000	3-2 1/2 x 1.005	NWG T48E	3 Spl 10	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	114	8x2 1/2 x 10 1/2	L
14	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
15	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
16	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
17	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
18	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
19	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
20	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
21	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
22	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
23	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
24	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
25	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
26	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
27	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
28	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
29	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
30	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
31	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
32	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
33	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
34	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
35	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
36	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
37	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
38	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
39	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
40	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
41	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
42	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
43	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
44	Brookway	895	138	164	13000	3965/6.00/20D	Con 24B	6-3	245	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	65	8x3 1/2	L
45	Chevrolet	478	115	115	4600	2360/6.00/16S	Own	6-3	233	10.5	165	73-3000	7-2 1/2 x 10 1/2	WG T9	4 Tim 3000H	4 Tim 53514H	SP	H	6-6	3000H	LAIH	266	388	TX	38 1/2	5 1/2 x 2 1/2 x 4 1/2	L
46	Chevrolet	478	115	115	4600	2360/6.00/16S	Own	6-3	233	10.5	165																

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

MAKE AND MODEL	WHEEL-BASE		Chassis Weight (See definition)	TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE		FRONT AXLE	BRAKES			FRAME								
	Minimum	Maximum		Standard	Front and Rear	D-dual rear 5-single rear	No. of Cylinders	Displacement	Comp. Ratio	Torque lb. ft.	H.P. at R.P.M.	Main Bearings Number and Diameter	Governor Standard	Make and Model	Gear and Type		Drive & Torque	Gear Ratio	Range in High		Make and Model	Location Type	Operat'n Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	Side Rail Dimensions	Type
Federal	Cont.	45	24000	7300	9.00/20D	11.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(6)	(6)	3525	24000	7300	9.00/20D	11.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(7)	(7)	5675	28000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(8)	(8)	705	28000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(9)	(9)	1260	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(10)	(10)	1500	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(11)	(11)	1750	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(12)	(12)	1945	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(13)	(13)	2250	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(14)	(14)	2500	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(15)	(15)	2750	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD	57	10 1/2 x 3 1/2	L
(16)	(16)	3000	30000	10400	10.50/20D	12.00/24	6-4 1/2 x 3 1/2	404	6.3	307	125-2800	7-2 1/2 x 1 1/2	Y	Cla 270V	5-Tim 5301H	SP	H	5.75-6.10	7.80	5.75-6.10	5-Tim 5301H	LAHIV	504	644	PD			

- **Rear 7.00/16.**
- ‡ **Rear 7.00/17.**
- ‡ **Rear 7.00/16.**
- ‡ **Rear 7.00/17.**
- **Rear 6.50/20.**

↑ Denotes new models or change in distribution and delivery charges and all taxes extra. ▲ International—6-cyl. Diesel engine Model AA-600 also available in these chassis.

[illegible]

* Includes price of cab.

* Includes price of cab.

Model	Price	Includes price of cab.	† Denotes new models or change in specifications.
78 (D) (c) ADV	10000		
79 (D) (c) ADV	10000		
80 (D) (c) ADV	13900		
81 Ward La. Fr. 204	7050		
Six-Wheelers			
82 bit(10) 3582	4800		
83 (10) 4082	5800		
84 (10) 4582	6800		
85 (10) 5082	7800		
86 (10) 5582	8800		
87 (10) 6082	9800		
88 (10) 6582	10800		
89 (10) 7082	11800		
90 (10) 7582	12800		
91 (10) 8082	13800		
92 (10) 8582	14800		
93 (10) 9082	15800		
94 (10) 9582	16800		
95 Dart.....1500	4050		
96 Dart.....2500	5050		
97 Dart.....3500	6050		
98 Dart.....4500	7050		
99 Dart.....5500	8050		
100 Dart.....6500	9050		
101 Dart.....7500	10050		
102 Dart.....8500	11050		
103 Dart.....9500	12050		
104 Dart.....10500	13050		
105 Dart.....11500	14050		
106 Dart.....12500	15050		
107 Dart.....13500	16050		
108 Federal 296X4	4950		
109 Federal 396X4	5950		
110 Federal 496X4	6950		
111 Federal 596X4	7950		
112 Federal 696X4	8950		
113 Federal 796X4	9950		
114 Federal 896X4	10950		
115 F.W.D. MJCX6	15750		
116 F.W.D. MJCX6	16550		
117 Hug.....99	8900		
118 Hug.....99	9900		
119 Hug.....99	10900		
120 Hug.....99	11900		
121 International (11)	14750		
122 DS-186-T	1750		
123 DS-186-T	1750		
124 DS-186-T	1750		
125 DS-186-T	1750		
126 DS-186-T	1750		
127 DS-186-T	1750		
128 DS-186-T	1750		
129 DS-186-T	1750		
130 DS-186-T	1750		
131 DS-186-T	1750		
132 DS-186-T	1750		
133 DS-186-T	1750		
134 DS-186-T	1750		
135 DS-186-T	1750		
136 DS-186-T	1750		
137 DS-186-T	1750		
138 DS-186-T	1750		
139 DS-186-T	1750		
140 DS-186-T	1750		
141 DS-186-T	1750		
142 DS-186-T	1750		
143 DS-186-T	1750		
144 DS-186-T	1750		
145 DS-186-T	1750		
146 DS-186-T	1750		
147 DS-186-T	1750		
148 DS-186-T	1750		
149 DS-186-T	1750		
150 DS-186-T	1750		
151 DS-186-T	1750		
152 DS-186-T	1750		
153 DS-186-T	1750		
154 DS-186-T	1750		
155 DS-186-T	1750		
156 DS-186-T	1750		
157 DS-186-T	1750		
158 DS-186-T	1750		
159 DS-186-T	1750		
160 DS-186-T	1750		

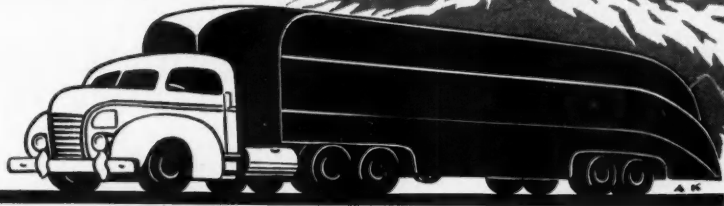
(*) Price includes chassis & cab. * International—6-cylinder Diesel engine Model AA-600 available in these chassis. Diesel Model HB-500 also available in DRD-346-T.

† Includes Cab.

† Denotes new models or change in specifications.

Line Number	MAKE AND MODEL	WHEEL-BASE		TIRE SIZES		ENGINE DETAILS				TRANSMISSION		REAR AXLE			FRONT AXLE	BRAKES				FRAME								
		Minimum	Maximum	Standard	Authorized Rear	Chassis Weight (See definition)	No. of Cylinders	Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Main Bearings Number, Diameter and Length	Governor Standard	Make and Model	Gear and Type	Drive & Torque	Gear Ratio	Range in High	Make and Model	Make Location	Open'n Type	Linking Area	Drum Material	Hand Location	Type	Side Rail Dimensions (Min. Std. W. B.)	
1	Marmon-Herr.																											
2	Cont.																											
3	(D) DSD200-6	7255	167	Op	7.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	79-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
4	(D) DSD300-6	7975	167	Op	8.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
5	(D) DSD400-6	8305	173	Op	9.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
6	(D) DSD500-6	8635	173	Op	9.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
7	(D) DSD600-6	8965	173	Op	10.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
8	(D) DSD700-6	9295	173	Op	11.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
9	(D) DSD800-6	9625	173	Op	12.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
10	(D) DSD900-6	9955	173	Op	12.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
11	(D) DSD1000-6	10285	173	Op	13.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
12	(D) DSD1100-6	10615	173	Op	14.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
13	(D) DSD1200-6	10945	173	Op	15.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
14	(D) DSD1300-6	11275	173	Op	15.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
15	(D) DSD1400-6	11605	173	Op	16.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
16	(D) DSD1500-6	11935	173	Op	17.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
17	(D) DSD1600-6	12265	173	Op	18.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
18	(D) DSD1700-6	12595	173	Op	18.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
19	(D) DSD1800-6	12925	173	Op	19.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
20	(D) DSD1900-6	13255	173	Op	20.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
21	(D) DSD2000-6	13585	173	Op	21.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
22	(D) DSD2100-6	13915	173	Op	21.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
23	(D) DSD2200-6	14245	173	Op	22.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
24	(D) DSD2300-6	14575	173	Op	23.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
25	(D) DSD2400-6	14905	173	Op	24.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
26	(D) DSD2500-6	15235	173	Op	24.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
27	(D) DSD2600-6	15565	173	Op	25.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
28	(D) DSD2700-6	15895	173	Op	26.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
29	(D) DSD2800-6	16225	173	Op	27.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
30	(D) DSD2900-6	16555	173	Op	27.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
31	(D) DSD3000-6	16885	173	Op	28.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
32	(D) DSD3100-6	17215	173	Op	29.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
33	(D) DSD3200-6	17545	173	Op	30.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
34	(D) DSD3300-6	17875	173	Op	30.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
35	(D) DSD3400-6	18205	173	Op	31.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
36	(D) DSD3500-6	18535	173	Op	32.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
37	(D) DSD3600-6	18865	173	Op	33.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
38	(D) DSD3700-6	19195	173	Op	33.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
39	(D) DSD3800-6	19525	173	Op	34.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
40	(D) DSD3900-6	19855	173	Op	35.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
41	(D) DSD4000-6	20185	173	Op	36.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
42	(D) DSD4100-6	20515	173	Op	36.75/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
43	(D) DSD4200-6	20845	173	Op	37.50/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
44	(D) DSD4300-6	21175	173	Op	38.25/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549	930	a	TX	84
45	(D) DSD4400-6	21505	173	Op	39.00/20	8465	6-3 1/2 x 3 1/2	200	14	178	83-2600	7-3 x 10 1/2	N Ful 5A33	N Ful 5A33	W MHI100	2F	R	6-66	WH 110	LAIH	549	930	a	549				

SEMI-TRAILER SPECIFICATIONS



SEMI-TRAILER MAKE MODEL	CHASSIS			TIRE SIZE		FRAME				SPRINGS			BRAKES				AXLE					Landing Gear Type Distance: Kingpin to Front of Frame	Fifth Wheel Width					
	Price (f. o. b. factory see Note)	Maximum body and Payload Rating (based on Axle Rating)	Chassis Weight (includes weight of items included in Price)	Standard (Dual)	Maximum Size Recommended (Dual)	Length		Height (in.)	Side-Rail Size and Type	Drop (in.)	No. and Type of Cross-Members	Size	Number Leaves	Helper Springs	Number Helper Leaves	Make, Type and Action	Drum Diameter and Width	Drum Material	Brake Lining Area	Automatic Emergency	Make			Beam Section Dimension	Beam Type	Spindle Diameter (at Inner Bearing)	% Body and Payload on Axle	
						Standard (ft.)	Longest Standard (at Extra Cost)																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
TWO-WHEEL																												
GRAMM																												
DF-40 (HT)	825	21000	3150	7.00/20	9.00/20	20	30	38	9 5/8x3 1/4	5 7C	51x3	12	Y	7	TMV	16 1/2x4	CN	295	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
DF-75 (HT)	1035	25000	3350	8.25/20	10.00/20	20	30	40	9 5/8x3 1/4	5 7C	51x3	13	Y	8	TMV	16 1/2x5	CN	370	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
DF-85 (HT)	1245	30000	3750	9.00/20	11.00/20	20	30	41	9 5/8x3 1/4	5 7C	51x3	14	Y	9	TMV	16 1/2x6	CN	444	Y	TI	5x3 1/2	Tu	3 1/4	52	H	15	33	
DF-95 (HT)	1545	34000	4150	10.50/20	12.00/20	20	30	43	9 5/8x3 1/4	5 7C	51x3	15	Y	10	TMV	16 1/2x6	CN	444	Y	TI	5x3 1/2	Tu	3 1/4	52	H	15	33	
DF-41	920	21030	3150	7.00/20	9.00/20	20	30	31	10 1/2x2 1/4x1 1/4 C	14 7C	51x3	12	Y	7	TMV	16 1/2x4	CN	296	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
DF-76	1130	25000	3350	8.25/20	10.00/20	20	30	32	10 1/2x2 1/4x1 1/4 C	14 7C	51x3	13	Y	8	TMV	16 1/2x5	CN	370	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
DF-86	1365	30000	3750	9.00/20	11.00/20	20	30	34	10 1/2x2 1/4x1 1/4 C	14 7C	51x3	14	Y	9	TMV	16 1/2x6	CN	444	Y	TI	5x3 1/2	Tu	3 1/4	52	H	15	33	
DF-96	1665	34000	4050	10.50/20	12.00/20	20	30	36	10 1/2x2 1/4x1 1/4 C	1 7C	51x3	15	Y	10	TMV	16 1/2x6	CN	444	Y	TI	5x3 1/2	Tu	3 1/4	52	H	15	33	
DF-42 (HT)	1020	21000	3350	7.00/20	9.00/20	20	30	21	9 5/8x3 1/4	22 7C	51x3	12	Y	7	TMV	16 1/2x4	CN	296	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
DF-77 (HT)	1230	25000	3550	8.25/20	10.00/20	20	30	22	9 5/8x3 1/4	22 7C	51x3	13	Y	8	TMV	16 1/2x5	CN	370	Y	TI	4 1/2x3 1/2	Tu	2 1/4	52	H	15	33	
HIGHWAY																												
20-B	780	22000	2900	7.00/20	9.25/20	20	28	41 1/2	10x3 1/4x1 1/4	5 4C3J	3x45	10	Y	5	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	53	H	38	30	
20-C	945	28000	3280	9.75/20	9.75/20	20	28	44 1/2	10x3 1/4x1 1/4	5 4C3J	3x45	12	Y	6	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	53	H	38	30	
20-D	1145	32000	3970	9.00/20	10.50/20	20	28	47 1/2	12x3 1/4x1 1/4	5 4C3J	3x45	15	Y	6	OMV	17 1/4x5 1/2	H	390	O	Ow	2 1/4x4 1/4	Re	3 1/4	53	H	38	30	
20-BA	980	22000	3150	7.00/20	9.25/20	20	28	41 1/2	10x3 1/4x1 1/4	5 9C1J	3x45	10	Y	5	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	53	A	24	30	
20-CA	1145	28000	3570	8.25/20	9.25/20	20	28	44 1/2	10x3 1/4x1 1/4	5 9C1J	3x45	12	Y	6	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	53	A	24	30	
20-DA	1345	32000	4200	9.00/20	10.50/20	20	28	47 1/2	12x3 1/4x1 1/4	5 9C1J	3x45	15	Y	6	OMV	17 1/4x5 1/2	H	390	O	Ow	2 1/4x4 1/4	Re	3 1/4	53	A	24	30	
20-B-DF	880	22000	3010	7.00/20	9.25/20	20	28	32 1/2	10x3 1/4x1 1/4	18 4C3J	3x45	10	Y	5	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	56	H	38	30	
20-C-DF	1045	28000	3390	9.25/20	9.75/20	20	28	33 1/2	10x3 1/4x1 1/4	18 4C3J	3x45	12	Y	6	OMV	17 1/4x4	H	288	O	Ow	2 1/4x3 1/4	Re	2 1/4	56	H	38	30	
20-D-DF	1245	32000	4100	9.00/20	10.50/20	20	28	36	10x3 1/4x1 1/4	18 4C3J	3x45	15	Y	6	OMV	17 1/4x5 1/2	H	390	O	Ow	2 1/4x4 1/4	Re	3 1/4	56	H	38	30	
KINGHAM																												
R-30	885	22500	2890	7.50/20	10.00/20	20	30	47	10x 1 1/2x2 1/4	6 7C	48x3 1/2	15	Y	5	OMV	16 1/2x4	CN	282	Y	Ow	4 1/2x1 1/2	Tu	2 1/4	55	H	16	30	
R-40	1170	29300	3580	9.00/20	12.00/20	22	30	49	10x 1 1/2x2 1/4	6 7C	48x3 1/2	15	Y	5	OMV	16 1/2x5	CN	352	Y	Ow	5x1 1/2	Tu	3	55	H	16	36	
HD-30	825	22500	3100	7.50/20	10.00/20	20	30	47	10x 1 1/2x2 1/4	6 7C	48x3 1/2	15	Y	5	OMV	16 1/2x4	CN	282	Y	Ow	4 1/2x1 1/2	Tu	2 1/4	55	H	16	30	
H-40	1130	29300	3880	9.00/20	12.00/20	22	30	49	10x 1 1/2x2 1/4	6 7C	48x3 1/2	15	Y	5	OMV	16 1/2x5	CN	352	Y	Ow	5x1 1/2	Tu	3	55	H	16	36	
TRUCK ENGINEERING																												
2SF	720	18000	2600	7.00x20	8.25x20	16	22	39	8x2 1/4x1 1/4 C	5 7C	45x2 1/2	14	Y	9	TMV	16 1/2x4	AI	292	Y	TI	4 1/2x3 1/2	Tu	2 1/4	57	H	15	30	
3SF	890	22000	3000	7.5x20	9.00x20	16	24	41	10x2 1/2x1 1/4 C	5 7C	48x3	15	Y	5	TMV	16 1/2x5	AI	364	Y	TI	4 1/2x3 1/2	Tu	2 1/4	57	H	15	30	
4SF	1160	26000	3800	9.00x20	10.00/20	18	26	42 1/2	10x2 1/2x1 1/4 C	5 9C	50x3	17	Y	6	TMV	16 1/2x6	AI	438	Y	TI	5x1 1/2	Tu	3 1/4	59	H	15	33	
5SF	1320	30000	4400	10.00/20	12.00/24	18	28	43 1/2	10x2 1/2x1 1/4 C	5 9C	50x3 1/2	17	Y	7	TMV	17 1/4x5 1/2	AI	438	Y	TI	5 1/2x1 1/2	Tu	3 1/4	59	H	15	33	
FOUR-WHEEL SE MIS																												
KINGHAM																												
H30T	1305	24000	4480	7.50/20	8.25/20	18	30	50	10x2 1/4x1 1/4	6 7C	44x2 1/2	11	N	N	OMV	16 1/2x4	CN	564	Y	Ow	4x1 1/2	Tu	2 1/4	66	H	16	30	
HD30T	1335	30000	4710	7.50/20	10.00/20	20	30	51	10x2 1/2x1 1/4	6 7C	48x3 1/2	13	N	N	OMV	16 1/2x4	CN	584	Y	Ow	4 1/2x1 1/2	Tu	2 1/4	66	H	16	30	
H40T	1865	38000	5925	9.00/20	10.00/20	22	30	53	10x 1 1/2x2 1/4	6 7C	48x3 1/2	15	N	N	OMV	16 1/2x5	CN	704	Y	Ow	5x1 1/2	Tu	3	66	H	16	36	

ABBREVIATIONS:

HT—Hi-Tensile Frame
N—No
O—Optional
Y—Yes

COLUMN 10

C—Channel

COLUMN 12

C—Channel

J—Jaw

COLUMN 17

Makes:

O—Own

T—Timken

Types:

M—Mechanical

Actuation:

V—Vacuum

COLUMN 19

AI—Alloy iron

CN—Chrome-Nickel-iron

H—Hi-Late

COLUMN 22

Ow—Own

TI—Timken

COLUMN 24

Re—Rectangular

Tu—Tubular

COLUMN 27

A—Full Automatic

H—Manual

Notes:

Column 2 gives the price of the chassis, f.o.b. factory. The price includes the following: standard length chassis; standard tires; power brakes; landing gear; tail and stop light; upper half of fifth wheel, and brake and electrical connections and fittings that are considered part of the trailer's equipment.

Column 3. The maximum body and payload rating of the semi-trailer is based on the axle rating in Column 26.

Column 4. Weight of complete chassis includes weight of items included in price in Column 2.

Column 8 gives the longest frame length available as a standard option at extra cost. Special lengths longer than the longest standard length are available also at extra cost.

Column 9. Frame height is the distance from the ground to top of frame over the rear axle with standard tires, loaded.

LUBRICANT AND COOLING CAPACITIES OF MOTOR TRUCKS

INCLUDING LUBRICANT CAPACITIES OF
ENGINE • TRANSMISSION • REAR AXLE



a—2-speed rear, 8 qt.
b—Double reduction rear, 6½ qt.
c—Double reduction rear, 9 qt.
d—Front axles same as rear.
e—10 summer, 14 winter.
f—2-speed rear, 13 to 15.
g—2-speed rear, 18.

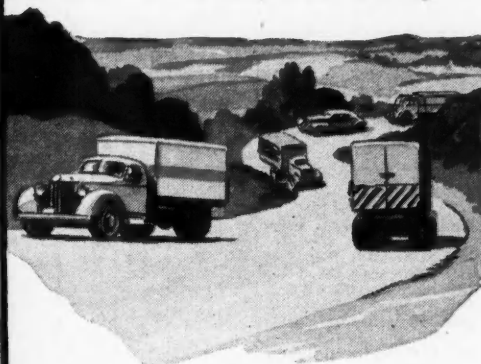
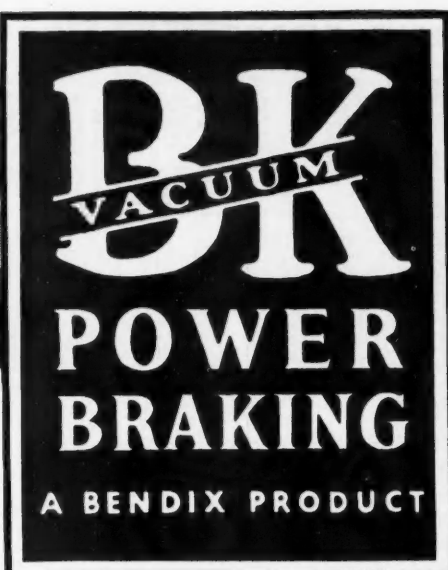
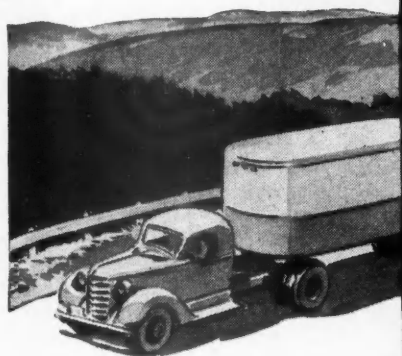
h—Auxiliary transmission and power divider require 8½ qt. additional.
i—Each axle.
j—10 summer, 15 winter.
k—18 pt. summer, 24 pt. winter.
m—8 pt. summer, 12 pt. winter.
n—Capacity of jackshaft unit.

p—Auxiliary transmission requires 6 pt. additional.
q—Auxiliary transmission requires 10 pt. additional.
r—Auxiliary transmission requires 14 pt. additional.

s—This figure for overdrive transmission. Direct drive requires 18 pt.
x—Auxiliary transmission requires 5 pt. additional.
y—Auxiliary transmission requires 12 pt. additional.

TRUCK MAKE AND MODEL	LUBRICANT CAPACITY				Cooling System Capacity, Quarts
	Engine Quarts	Transmission Pints	Rear Axle Pints	Front Axle Pints	
AUTOCAR					
A, UA	6	8	8		22
B, UB	6	12	14		22
RL, RLD, RM, RMT, 1TR, 6X2RL, RLS, URLS	10	14	12		23
D, DP	10	14	12		39
UD, 1UTR	10	14	12		37
UDP, 6X2UD	10	14	12		37
S	12	30	18		39
N, DH, 3TR	12	14	18		39
6X2NF	12	18	18		39
DF, 2TR, 6X2DF	12	14	12		39
T, NF, 5TR, 6X2T, UNF, UT, 4UTR, 5UTR, 6X2UNF, 6X2UT	12	18	18		41
UN, 2UTR, 3UTR, 6X2UN, US, UDF	12	14	12		41
C	12	30	18		41
4X4DF, 4X4N	12	19			39
4X4NF	12	23			39
4X4S	12	23			41
6X4DF	12	14			39
6X4TO, 6X4UTO, 6X4UTD	12	18			41
6X4TD	12	30			41
6X4TC	12	30	28		41
RB, URB	10	12	12		23
C10, C10T, U10, U10T	6	8	8		22
C20, C20T, U20, U20T	6	12	12		22
C30, C30T, U30, U30T	10	12	12		23
C40, U40	10	14	12		23
C40T, C40D, C40E2, U40T, U40D, U40E2	10	14	14		23
C40E4	10	14	12		23
C50T, U50T	10	14	14		23
C50D	10	16	20		23
C60	12	14	14		39
U60	12	14	14		37
C60T, C70, C70T, C70D, C70E2, U60T, U70T, U80, U80T, U80D, U80E2	12	14	18		41
U60D	12	14	18		37
U70, U70E2	12	14	20		41
C70E4	12	14			39
C70E4	12	14	12		39
U70E4	12	14	12		41
C80, C80T, C80E2	12	14	18		39
C80D	12	14	18		39
C80E4	12	14			41
C80E4, U80E4	12	14	16		41
C90, C90T, U90, U90T	12	14	18		41
C90D	12	14			41
U90D	12	24			41
C90E4	20	24			48
C90E2, U90E2	12	14	18		41
C90E4	12	14			41
U90E4	12	14			41
DC100T	16	24	18		46
DC100D	16	26			46
DC100E4	16	24			46
DC100E2	16	26	18		46
DC100E4	16	24			46
DU100T, DU100E2	20	26	18		41
DU100E4	20	26			41
BANTAM					
60	3	2½	2½	4	
65	3	2½	2½	5½	
BROCKWAY					
78 (1926-40)	5	6	6	15½	
83 (1936-40)	5	6	6	19½	
BROCKWAY—Cont.					
88 (1936-40)	5	6	8	19½	
94 (1936-40)	5	5½	12	19½	
96, 110, 125X, (1936-40)	8	5½	8	26	
112 (1936-40)	7	5½	8	22	
128 (1936-40)	7	5½	12	22	
130, 145 (1936-40)	8	5½	12	28	
150X4 (1936-40)	8	8½	12	28	
150X5 (1936-40)	8	16	12	28	
160X, 36XSBT, 165X, (1936-40)	8	16	12	30	
170X (1936-40)	10	24	11	29	
180XSBT Spec. (1936)	10	24	13	30	
175X, 195X (1936-40)	10	24	12	29	
220X (1936-40)	10	24	17	29	
240X (1936-40)	10	24	12	31	
260X (1936-40)	10	23	17	31	
148 (1941)	7	12	12	22	
147 (1941)	7	12	16	22	
152, 153, (1941)	8	16	12	28	
154 (1941)	8	16	16	28	
156 (1941)	8	16	18	28½	
162 (1941)	8	16	12	29	
166 (1941)	8	16	12	29½	
CHEVROLET					
½ Ton (1934-35)	5	2½	4½	10½	
½ Ton (1934-35)	5	6½	6½	10½	
½ Ton (1936)	5	2½	4½	15	
½ Ton (1936)	5	6½	7	15	
½ Ton (1936)	5	1½	4½	14	
½ Ton (1937-38)	5	7	9	14	
½ Ton (1937-38)	5	1½	4½	14	
½ Ton (1939-41)	5	5½	9	14	
½ Ton (1939)	5	5½	9	14	
½ Ton (1940-41)	5	5½	11	14	
C.O.E. (1939)	5	5½	9	16½	
C.O.E. (1940-41)	5	5½	11	16½	
CORBITT					
12B (1937)	6	8	12	26	
22B (1937)	8	24	14	30	
148T (1937)	8	8	8	26	
188T (1937)	8	24	14	30	
228T (1937)	10	30	15	38	
278T (1937)	10	30	16	38	
12B (1938-41)	5	8	12	26	
13B (1938-41)	5	8	8	27	
17B, 178T (1938-41)	7	12	14	28	
21B (1938-41)	8	16	15	30	
26D (1938-41)	8	16	16	30	
148T (1938-41)	7	12	8	29	
188T (1938-41)	8	16	14	31	
228T (1938-41)	10	24	15	38	
278T, F27, 278T (1938-41)	10	24	18	38	
F12 (1938-41)	5	8	12	27	
F14 (1938-41)	7	8	8	28	
F18 (1938-41)	8	8	9	30	
F19 (1938-41)	7	12	9	28	
F23 (1938-41)	10	16	11	38	
F35	10	24	17	38	
DIAMOND T					
412DR (1935-37)	8	10	12	24½	
512B (1935-37)	8	10	8	24½	
612DR, (1935-37)	8	10	18	24½	
212A, 212B (1936-37)	6	4½	6	23½	
221 (1936-37)	6	4½	6	24	
228 (1936-37)	6	4½	8	23½	
244, 313 (1936-37)	6	4½	8	24	
320, (1936-37)	6	6	8	26½	
353, 360 (1936-37)	6	10	8	26½	
80 (1936-37)	6	2	5	18	
DIAMOND T—Cont.					
80, 301, 304 (1938)	6	4	4	21	
401COE (1938)	6	4	6	23½	
402COE (1938)	6	4	6	23½	
404, 405 (1938)	6	4	6	22½	
406 (1938)	6	4	6	23	
507 (1939)	6	6	8	23½	
509 (1939)	6	6	6	23	
607COE (1939)	6	6	8	26	
609COE (1939)	8	10	6	26	
611 (1939)	6	7	8	25	
612 (1939)	6	10	8	25	
613, 614 (1939)	6	10	8	24	
412DR, 512DR (1939)	8	18	12	26	
512B (1939)	8	18	10	26	
201, 305, 306 (1939)	6	4	4	16	
201C, 305C (1939)	6	4	5	18	
306C (1939)	6	4	6	18	
404, 406 (1939)	6	4½	6	23	
404C, 509 (1939)	6	4½	6	23	
509C, 612C (1939)	6	4½	8	23	
612 (1939)	6	4½	8	22	
614 (1939)	6	12	8	22	
614C (1939)	6	12	8	24	
803C (1939)	8	20	10	28	
804C (1939)	8	20	12	28	
201 (1940)	6	3½	6	16	
201C (1940)	6	4½	8	18	
306, 306C (1940)	6	4½	8	16½	
306SC (1940)	6	4½	8	19	
404 (1940)	6	4½	8	18	
404C (1940)	6	4½	8	23½	
404SC (1940)	6	4½	8	26	
406, 509 (1940)	6	4½	9	23½	
509C, 612C (1940)	6	4½	9	24	
612 (1940)	6	4½	9	23	
614, 614C (1940)	6	12	9	31½	
803C (1940)	8	20	12	28	
804C (1940)	8	20	16	28	
805H, 805W (1940)	8	20	20	28	
805B, 805BW (1940)	8	20	12	28	
805DR, 805DRW (1940)	8	20	12	28	
900W (1940)	13	24	14	43½	
201 (1941)	6	3½	6	16	
201C, 306C (1941)	6	4½	8	18	
306 (1941)	6	4½	8	17	
306SC (1941)	6	4½	8	19	
404, 404C (1941)	6	5	8	23	
404SC (1941)	6	5	8	26	
406, 509, 612SC (1941)	6	5	9	23	
406SC, 509SC (1941)	6	5	9	26	
509C, 612C (1941)	6	5	9	24	
612 (1941)	6	5	9	22	
614 (1941)	6	12	9	22	
614C (1941)	6	12	9	23	
612SC (1941)	6	5	9	25	
614SC (1941)	6	12	9	25	
805C (1941)	8	20	12	28	
806, 806C (1941)	8	20	16	28	
805 (1941)	8	20	20	28	
702 (1941)	8	20	12	44	
900 (1941)	14	24	14	44	
DODGE					
KC, KCL, KH Series, LC	5	2½	3½	15	
K32, K33, K34	5	6	5	12	
K35, K36, K37, K38, K45, K46, K47, K48	8	5	8	14	
K50, K51, K52, K70, K71, K72	8	10	6	23½	
LE Series	5	6	4½	16½	
LF Series	5	6	8	16	

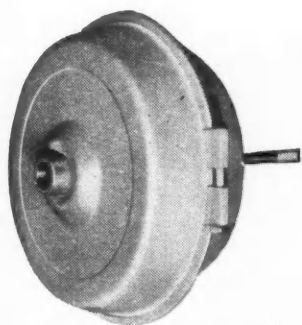
CONTINUED ON PAGE 68
COMMERCIAL CAR JOURNAL
APRIL, 1941



Bendix

reliability

grows more and more pronounced . . . as the need for it grows more and more *imperative!*



**Typical of such advancements—one among many—is this new Diaphragm Type Power Chamber illustrated. Characteristics: exactly uniform pull throughout its stroke, faster action, extreme ease of maintenance. Built in two sizes.*

THE same Bendix engineering leadership that pioneered vacuum power braking, has developed it, year by year, keeping steady pace with the growing need for greater braking power, ease of maintenance and reliability. And B-K acceptance continues to expand at an amazing rate . . . an inspiring tribute in the stress of times like these.

*New refinements in vacuum power application and control make genuine Bendix B-K Controlled Vacuum Power Braking today, far and away, the most responsive, economical, efficient system money can buy.

And it takes very little money to buy Bendix B-K for any truck!

Older trucks, with earlier types of B-K applications, are readily and inexpensively modernized by any Bendix B-K service station (there are hundreds of Bendix Service Stations from coast to coast).

Every state and federal statute—every local brake law—is fully met by modern Bendix B-K equipment. Every advantage which power braking can give you, is provided by Bendix B-K. And every reason that impels you to install power braking on your trucks points powerfully and directly to pioneer, time-proved, world-preferred Bendix B-K.

BENDIX PRODUCTS DIVISION

OF BENDIX AVIATION CORPORATION • SOUTH BEND, INDIANA

In Canada: Bendix-Eclipse of Canada, Ltd., Windsor, Ont.

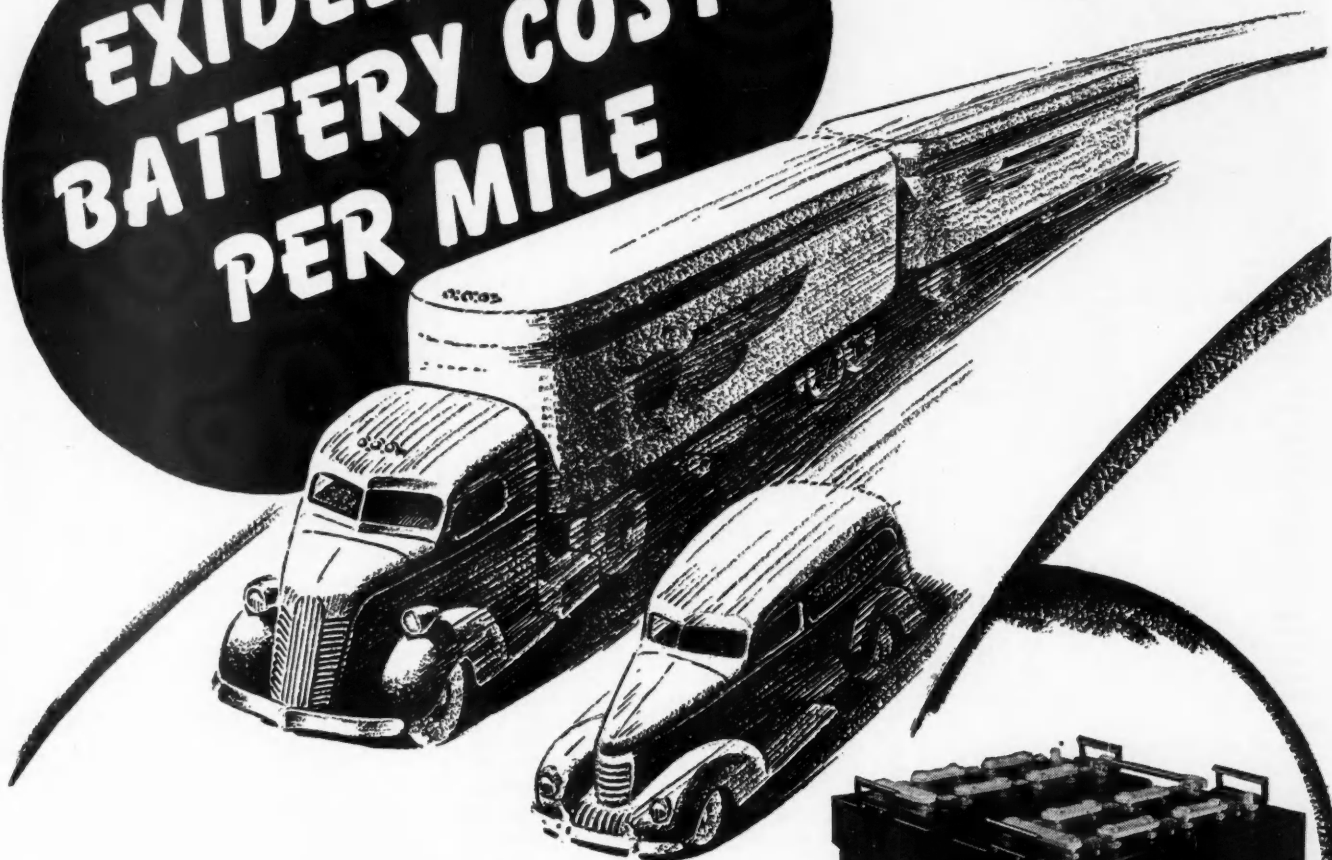
The 10-to-1 favorite among all forms of
POWER BRAKING

LUBRICANT & COOLING SYSTEM CAPACITIES-Continued

CONTINUED FROM PAGE 66

TRUCK MAKE AND MODEL	LUBRICANT CAPACITY				Cooling System Capacity, Quarts
	Engine Quarts	Transmission Pints	Rear Axle Pints	Front Axle Pints	
DODGE—Cont.					
LG, LH Series	8	11	14	18	
K50V, K51V, K52V, K80V, K81V, K82V	8	11	14	20½	
MC, RC Series (1937-38)	6	3½	3½	16	
MD, RD Series (1937-38)	6	3½	4	16	
ME, RE Series (1937-38)	6	6	6½	18	
MF, RF Series (1937-38)	6	6	8	18	
MG, MH, RG, RH Series (1937-38)	6	11	8	19	
ML, MK, RL, RK, RU Series (1937-38)	8	11	14		
TC (3-Speed Trans.)	6	3½	3½	15½	
TD (4-Speed Trans.)	6	3½	3½	15½	
TD-15 (3-Speed Trans.)	6	3½	3½	17	
TD-15 (4-Speed Trans.)	6	3½	3½	17	
TD-20, TD-21 (3-Speed Trans.)	6	3½	4	17	
TD-20, TD-21 (4-Speed Trans.)	6	3½	4	17	
TE (4-Speed Trans.)	6	6	6½	19½	
TF (4-Speed Trans.)	6	11	11	19½	
TF (5-Speed Trans.)	6	11	10ab	20½	
TG, TH	6	11	7ac	28	
TL, TK, RO, RP	14	11	7ac	18½	
TLD, TKD	6	3½	3½	17	
VC, WC	6	3½	3½	17	
VD-15, WD15	6	3½	3½	20½	
VD-20, VD-21, WD20, WD21	6	3½	3½	20½	
VF, VM, WF, WFM	6	6	11	19½	
VG, VH, WG, WH, WGM, WHM	6	11	10ab	20½	
VL, VK	6	11	14ac	28	
VLD, VKD, WLD, WKD	14	11	14ac	35	
FEDERAL					
9 (1937-38)	5	4	4	18	
10 (1937-38)	4	4	4	18	
11, 11K, M11, 12K, M12, 14K, 11H, 14, M14	4½	4	4	15	
15, 15H, 15K, 16K, 17K, 18, 18H, 18K, 20, 20H, 20K, 75, 75H, 75K, 76K, 77K, 80, 80H, 80K	4	4	8	25	
29, 29K, 88, 89K	4	13	12	25	
29H, 89H	4	13	15	25	
25, 25H, 25K, 85, 85H, 85K	4	8	12	25	
C7, C8	10	24	22	29	
40, 50, 40F	8	9	15	30	
62	12½	22	32	34	
63	10½	22	32	32	
7M7	5	5	3	12	
8M8	4½	5	3	14	
35, 90	7	12	12	28	
45, 65, 92, 94	7	10	15	28	
FORD					
AA, BB, 4 Cyl. (1929-34)	5	2½	9	13½	
BBV8 (1932-34)	5	2½	9	22	
51V8 (1935-36)	5	2½	9	25	
75V8 (1937)	4	5	9	16	
79V8 (1937)	5	5	9	25	
81T, 81TT (1938)	5	5	9	24	
81Y (1938)	5	2½	5	22	
82Y (1938)	4	2½	5	16	
81C (1938)	5	2½	2½	22	
82C (1938)	4	2½	2½	16	
91T, 91TT, 911W, 91W, 917W, 99T, 99TT, 991W, 99W, 997W (1939)	5	5	7	24	
91Y, 91C (1939)	5	3	3	22	
92Y, 922C (1939)	4	3	3	16	
O18T, O1T, O1W, O11W, O96T, O9T, O9W, O91W, 118T, 11T, 11W, 111W, 119T, 19T, 19W, 191W	5	5	7	24	
O1D, O1Y, O1C (1940)	5	2½	3	22	
O2D, O2Y, O22C (1940)	4	2½	3	16	
11D, 11Y, 11C (1941)	5	2½	3	24	
1ND, 1NY, 1NC	4	2½	3	14	
FWD					
HS (1938-40)	10	12	12d	11	
HG (1938-40)	12	16	12d	24	
HM (1938-40)	12	16	8d	28	
HH6 (1938-40)	12	16	8d	28	
CU (1939-40)	12	32	12d	36	
CUA (1939-40)	12	16	12d	36	
SUA (1939-40)	12	24	8d	36	
SU, YU (1939-39)	12	32	8d	36	
MJ5 (1938-40)	12	24	16d	50	
MJ6 (1938-40)	12	22	16d	40	
M7 (1938-40)	20	22	16d	52	
M10 (1938-40)	20	22	16d	60	
MJ6X6 (1938-40)	12	22	20d	40	
MJ6X6 (1938-40)	20	22	26d	40	
T28 (1939-40)	10	12	12d	24	
T32 (1939-40)	12	16	12d	28	
T40 (1939-40)	12	24	8d	36	
T60 (1939-40)	20	26	8d	36	
T85 (1939-40)	20	26	16d	40	
T72 (1939-40)	20	22	16d	52	
GENERAL MOTORS					
T14 (1937)	6	1½	5	15½	
T16 (1937)	6	7	7½	15½	
F16 (1937)	6	7	6½	15½	
GENERAL MOTORS—Cont.					
T16H, F16H (1937)	6	7	6½	15½	
T18, T18H (1937)	7	4	6½	16	
F18, F18H (1937)	6	4	6½	16	
T23, F23 (1937)	8	7	10	20	
T23H, F23 (1937)	8	7	13	20	
T33 (1937)	7	7	13	20	
F33 (1937)	6	7	13	20	
T33H (1937)	7	7	9	20	
F33H (1937)	6	7	9	20	
T46 (1937)	12	10	28	28	
F46 (1937)	10	10	28	28	
T46, 400 (1937)	12	10	28	34	
F46, 400 (1937)	12	10	28	34	
T61 (1937)	12	10	28	34	
F61 (1937)	12	10	28	34	
T61H (1937)	12	10	28	34	
F61H (1937)	12	10	28	34	
T14, T14S, T15 (1938)	6	13½	15½	15½	
T15S (1938)	6	13½	15½	16	
T16, F16 (1938)	6	8½	7½	17	
T16H, F16H (1938)	6	8½	10	17	
T18, T18H (1938)	7	4	10	16	
F18, F18H (1938)	6	4	10	17	
T23 (1938)	7	7	10	17	
T23H (1938)	7	7	13	17	
F23 (1938)	6	7	10	17	
F23H (1938)	6	7	13	17	
T33 (1938)	7	13	13	17	
T33H (1938)	7	13	9	17	
F33 (1938)	6	13	13	17	
F33H (1938)	6	13	9	17	
T46 (1938)	12	13	9	28	
F46 (1938)	10	13	9	28	
T61, T61H, F61, F61H (1938)	10	(e)	16	34	
AC100, AC150, CC100, CC150	8	13½	4½	16	
AC-250, AF-240, AF-241, CC-300	8	13½	5½	16	
CC-250	8	13½	3	16	
CC-250	8	13½	3	16	
AC-300, AF-300, AF-310, CC-300	8	6½	6f	17	
AC-350, AF-350, CC-350, CF-350	8	6½	7f	17	
AC-400	9	4	7f	18	
AF-400, CC-400, CF-400	9	7	7f	18	
AC-450, AF-450, CC-450, CF-450	9	7	8½	18	
AC-500, AF-500	9	13	12g	18	
AC-550, AC-600, AF-550, AF-600	9	13	13g	18	
AC-550, AF-650	9	13	15g	18	
AC-700, AF-700	10½	11½	15g	22	
AC-800, AF-800, AC-850, AF-850	10½	9	16	22	
GRAMM					
11 (1940-41)	6	6	4	18	
15 (1937-39)	6	6	6	18	
21 (1940-41)	6	6	6	18	
25, 30, 31 (1937-40-41)	6	6	9	19	
40, 41, 46 (1937-40-41)	6	6	9	19	
45, 50 (1937-39)	6	6	8	19	
55 (1937-39)	6	6	8	20	
56 (1940-41)	6	6	10	20	
70 (1937-39)	6	6	14	20	
71 (1940-41)	6	12	10	20	
75 (1937-39)	6	6	14	22	
76, 86 (1940-41)	6	12	13	22	
85 (1937-39)	6	6	16	22	
96 (1940-41)	7	20	16	24	
DJX40 (1937-39)	6	6	9	23	
DJX70 (1937-39)	6	6	14	23	
DJX75 (1937-39)	6	6	14	25	
DJX85 (1937-39)	6	6	16	25	
DJX55 (1937-39)	6	6	8	23	
D46 (1940-41)	6	6	9	23	
D56 (1940-41)	6	6	10	23	
D71 (1940-41)	6	12	10	23	
D76 (1940-41)	10	12	13	25	
D86 (1940-41)	10	20	13	25	
D96 (1940-41)	10	20	16	25	
HUG					
42 (1936-39)	10	16	9	28	
43 (1936-39)	10	24	11	28	
D42 (1936-39)	10	24	9	31	
D43 (1936-39)	10	15	11	31	
D43L (1936-39)	14	15	12	38	
70K (1936-39)	10	16	12	28	
87Q, D87Q (1936-39)	10	24	16	28	
99, 99S, D99, D99S (1936-39)	14	24	52	38½	
15W (1940-41)	8	8	8	23	
19W, 83W (1940-41)	8	12	8	23	
23W (1940-41)	8	12	8	24	
42W, 85W (1940-41)	8	16	8	28	
43W (1940-41)	18	15	12	38	
87W (1940-41)	8	16	11	28	
92U (1940-41)	10	24	16	28	
98 (1940-41)	18	36	18½	38	
D98 (1940-41)	14	36	16½	38	
HUG—Cont.					
99 (1940-41)	18	36	33	38	
D99 (1940-41)	14	36	33	38	
99S (1940-41)	18	36	52	38	
D99S (1940-41)	14	36	52	38	
INTERNATIONAL					
C1, C15, C30, CS30, C30S	6½	5½	9½	15	
A1, A2, B2, M2, M3, C10, C20, CS20	4	5½	9½	17	
B3	7	5½	9½	20	
C5	4	3	4	14	
C35, C35B, CS35, CS35B, C35T, CS35T, B4, C40, CS40, C40T, C40F	7	9	15	20	
A4, A5, A6, C50, C50T	10	11½	12	28½	
C55, C55F, C55T, C60, C60T	9	11½	12	28½	
A7, A7F	9	11½	12	28½	
A8	20	48	24	42	
D2, D15	6½	3	4	15½	
D5	4	3	4	14½	
D30, D30B, D30S, D186T	6½	5½	7	18	
D30, D30B, D30S, D186T	6½	5½	17	18	
D35, D216T	7½	5½	10	18½	
D35B	7½	14	10	18½	
D35S	7½	5½	17	18½	
D5216T	7½	5½	16	18½	
D40	7½	14	10	21½	
D540	7½	14	16	21½	
D50, DR50, D246, DTR246T	10	14	16	24½	
D550, DS246T	10	19	17	24½	
D60, DR60	10	19	16	28	
DR70, DR346T	10	19	16	31	
D300	6½	5½	7	19½	
DS300	6½	5½	17	19½	
D500, DR500	10	14	16	25½	
D5500	10	19	17	25½	
DR700	10	19	16	32	
D246F	10	14h	15h	24½	
D346F	10	19h	16h	31	
DR426F	10	48h	16h	31	
AR626F	22	48h	12h	80	
M3	4	5½	9½	17	
K1, K2	6	5½	5	13½	
K3	6	5½	7	14	
K4	6	5½	11	14	
K5	6	5½	7	18½	
K6	6	5½	17	18½	
K7	6	5½	13	18½	
K8	6	5½	13	18½	
K8, KR8, KS8	9½	11s	17	24½	
K10	9½	18	11	24½	
KR10	9½				

**EXIDES CUT
BATTERY COST
PER MILE**



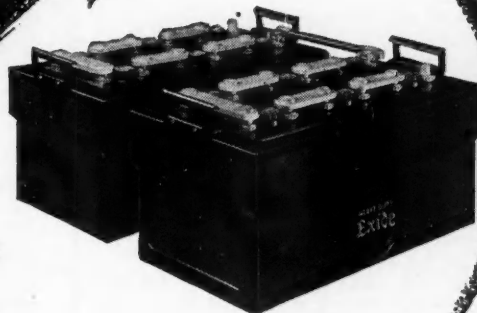
**..... in light delivery cars, or
Diesel-powered tractor-trailer units**

Part of the secret of the long, low-cost service fleet operators enjoy with Exides is the way these batteries always fit the job. There is an Exide for every size and type of vehicle, and for every operating condition. There are Exides especially adapted for Diesel-powered units, just as there are those for light delivery cars, and for heavy-duty trucks with gasoline engines. There are also Exides with wood and fibreglas separators for "cycling" service.

This range of specially engineered Exide sizes and types means substantial savings for the fleet operator. Not only can you get exactly the battery capacity your vehicles and operating conditions require, but in an Exide you can get whatever type of battery is needed to insure the utmost dependability at lowest cost per mile.

To avoid all guesswork, Exide Engineering Service is available to analyze requirements and make expert recommendations. Why not standardize on Exides, and let these batteries start cutting battery cost for you... beginning now? Call your Exide Distributor today, or write to us.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto



Exide
BATTERIES
FOR EVERY TYPE TRUCK

LUBRICANT & COOLING SYSTEM CAPACITIES-Continued
CONTINUED FROM PAGE 68

TRUCK MAKE AND MODEL	LUBRICANT CAPACITY				Cooling System Capacity, Quarts
	Engine Quarts	Trans-mission Pints	Rear Axle Pints	Front Axle Pints	
MARMON-HERRINGTON—Cont.					
F5-6, FF5-6, F6-6, FF6-6, H5-6, HH5-6, H6-6, HH6-6, J5-4, J6-4, JJ5-4, JJ6-4, JJ8-6, LD5-4, LLD5-4, OT4-4, OOT4-4	5	5	7	24	
DSD-100-4, DSD-200-4, DSD-200-6, DSD-300-4, DSD-300-6	6	10	10	24	
DSD-400-4, DSD-400-6	6	12	10	24	
DSD-500-4, DSD-500-6	7	16	15	36	
DSD-550-4, DSD-550-DR4	7	17	10	32	
DSD-600-4, DSD-600-6	10	24	10	38	
DSD-700-4, DSD-700-6	10	24	19	38	
DSD-800-4, DSD-800-6	10	24	20	38	
DSD-900-4, DSD-900-6	10	24	20	38	
DSD-1000-4, DSD-1000-6	14	22	24	69	
O&H KOSH					
WLD	7	23½	10½	28	
WLX	7	23½	10½	28	
JCB	6	11	8½	22	
JD	6	11	8½	22	
FC-35	10	30½	12	40	
FS, FB, FC, FE-35	10	30½	12	40	
B35	7	23½	10	28	
B3D	7	23½	11	28	
C35	10	30½	10	40	
C3D	10	30½	12	40	
R35	10	30½	19	40	
FD	10	30½	25	40	
W100	6	10p	12	25	
W200	6	10p	15	25	
W300, W304, W307	6	10p	12	36	
W400	6	10p	14	44	
W500	10	21p	15	44	
W600	10	21p	15	48	
W700	10	21p	15	48	
W70A, W70B	13	21p	15	46	
W800	13	21p	15	46	
W900	16	19q	18	40	
BG3, GD, GDC	16	19n	21	62	
REO					
4H5, 4J5, 4K5 (1936-37)	9	12	15	31	
480 (1937)	4	2¼	2	12	
478 (1937)	4	2¼	3½	12	
650 (1937)	5	2½	2	14	
678 (1937)	5	2½	3½	14	
1A4, 1C4 (1937)	6	6	9	15½	
1A4H, 1C4H, 1B4, 1D4 (1937)	6	6	9	19	
1B4H, 1D4H, 2B4, 2D4 (1937)	6	6	9	19½	
2H5, 2J5 (1937)	6	12	9	19½	
3H5, 3J5, 3K5, 3HR5, 3JR5, 3KR5 (1937)	6	12	15	25	
480, 480L	4	2¼	2	12	
478, 478L	4	2¼	3½	12	
650, 650L	5	2½	2	14	
678, 678L	5	2½	3½	14	
1A4, 1C4	6	6	9	15½	
1A4C, 1C4H, 1B4, 1D4	6	6	9	19	
1B4H, 1D4H, 1BM7, 2BM7, 2B4, 2D4, 2L7M	6	6	9	19½	
2J5, 2H5, 2L4H, 2L7MH, 1L5	6	12	9	19½	
3H5, 3J5, 3K5, 3HR5, 3JR5, 3KR5	6	12	15	25	
4H5, 4J5, 4K5	9	(1)	15	31	
3L5H	9	12	15	31	
20, 21	8	5½	4½	17	
22	8	5½	7½	17	
23	8	11	11	18	
4D19	8	11	7½	19	
6D19	5	5½	4½	17	
D20	6	5½	4½	17	
STERLING					
FB80 DeL. (1937-38)	8	6	8	22	
FB80 DeL. (1937-38)	8	7	8	22	
FB70 DeL. (1937)	8	8	14	22	
STERLING—Cont.					
FC90 (1937-38)	8	9	16	22	
FBT130	8	11	14	23	
FB-30 (1937)	8	24	15	32	
FD90 (1937)	8	24	11	32	
FD97 (1937)	10	12	15	36	
FC135 (1937)	10	12	18	36	
HC140 (1937)	10	12	18	44	
FD115 (1937)	10	12	18	36	

Safety Convention, April 22-25

Accident prevention in the manufacture, operation and maintenance of commercial and military motor vehicles will be the theme at the automotive sessions of the Twelfth Annual Safety Convention and Exposition in New York's Hotel Pennsylvania, April 22-25.

The convention, under the direction of the Greater New York Safety Council, has been expanded to four days to permit attention to all the safety-defense problems which confront the safety engineer and the department of accident prevention.

Of direct interest to the automotive manufacturer and operator are the luncheon addresses on: "The Commercial Vehicles' Part in National Defense" by Ted Rogers, President, American Trucking Associations, Washington; "Outside Plant Lighting for Defense Against Sabotage" by Hoyt Post Steele, Benjamin Electric Manufacturing Company, Des Plaines, Ill., and discussions of the safe training of green hands and new foremen.

The convention and exposition comprises 52 sessions, and will have 200 speakers as well as a safety equipment display.

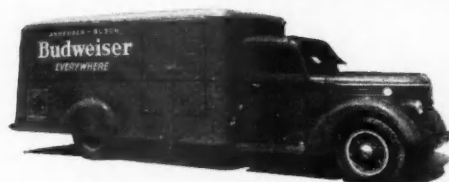
Fleetman Available

Walter Burkart, 1609 Roslyn Rd., Grosse Pointe Wds., Mich., is seeking a fleet connection. Mr. Burkart until recently had charge of a fleet of 22 dairy trucks. His experience covers 15 years, five of which were spent as an automotive machinist in the shop of an automotive jobber.

Mr. Burkart can operate all kinds of shop equipment including a boring bar and piston grinder as well as welding equipment. He has a complete set of tools including many instruments for tune-up and diagnosis.

FEDERAL is FIRST- in serving *Thirst!*

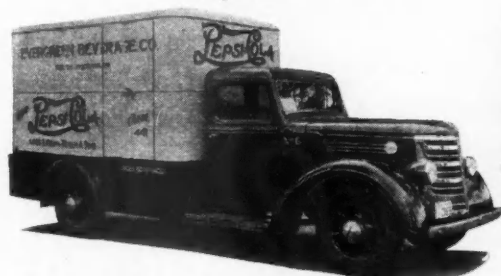
AND A LEADER IN THRIFT FOR EVERY TRUCKING
PURSE AND PURPOSE . . .



Model 15 Federal 1½ to 3 ton capacity truck
used by Southern Liquor Distributors at
Jacksonville, Fla.



Trimble Brothers of Omaha, Neb., use Federal
1½ to 2½ ton capacity Cab-Over-Engine
Trucks for distribution of Canada Dry
Ginger Ale.



Another fleet of husky Federal Trucks is in
use on the West Coast by Evergreen Beverage
Co. of Portland for distribution of Pepsi-Cola.

Fleet owners throughout the country have found the perfect answer to low cost, dependable transportation in Federal's heavier, huskier, all-truck designs. Reports on operating overhead and maintenance upkeep in every field of activity prove conclusively that such over-all truck construction provides the added efficiency and protection that spell consistent reliability—lower ton-mile costs. Federal fleet owners know their trucks—from the ¾ ton models to highest tonnage capacities—recognize the supreme advantages of heavier frames and axles, sturdier clutches and transmissions, stouter brakes, greater reserve horsepower, complete job-fitness to give a greater performance payoff in bedrock economies. You can toss the tough jobs to Federal . . . confident of results—certain of savings!

Consult your nearest Federal Dealer—or write direct to the factory for specific information and recommendations on Federal Trucks in your particular operation.

*From ¾-Ton to Highest Tonnage Capacities,
Federal Has a Truck Tailored to Fit the Job.*



This 1½ to 2½ ton Federal Cab-Over-Engine model is one of a fleet of 21 Federals in use by Horton Pilsener Brewing Co. of New York City.



This 145-inch wheelbase Federal 1½ to 2½ ton Truck of Coca-Cola Bottling Co. of Charlotte, N. C., illustrates the amazing compactness available in these heavy duty models.



One of a series of attractive 130-case Federal 1½ to 3 ton Trucks used by 7-Up Bottling Co. of St. Louis, Mo., for store to store deliveries.

We Repeat:
**"Toss the TOUGH JOBS
to FEDERAL"**

FEDERAL MOTOR TRUCK CO., DETROIT, MICHIGAN
For 31 Years—Known in Every Country . . . Sold on Every Continent

FEDERAL TRUCKS

Dealers everywhere are finding that it pays to sell Federals. Some specially desirable territories still open. Write for Franchise Details.

"TON FOR TON IN '41—FEDERAL LEADS THE WAY!"

NEWSCAST



Higher Gross Weights in Four States

Foremost among the legislative developments of the month is the enactment of higher gross vehicle weights in Tennessee, Texas, North Dakota and Indiana. For details of these developments together with a report on all important legislation to date, see "Legislative Lookout" beginning on page 156 of this issue.

President Names Transportation Board

President Roosevelt sent to the Senate on March 20 his nominations for a three-man board, authorized by the Transportation Act of 1940 to study the adequacy and relative advantage of existing rail, truck and water carriers. The nominees, which must be confirmed by the Senate are: Wayne Coy, assistant Federal Securities Administrator, chairman; Nelson Lee Smith, chairman of the Public Service Commission of New Hampshire, and Charles E. West, former Ohio member of Congress and Under Secretary of the Interior.

Mechanics, Loaders and Helpers Placed Under ICC Jurisdiction

The Interstate Commerce Commission last month extended its jurisdiction over the hours of service of employees of all motor carriers engaged in interstate commerce to include mechanics, loaders and drivers' helpers. The decision which automatically exempts these employees from the hours provisions of the Fair Labor Standards Act, was based on the premise that these classes of workers "affect safety of operation." For a detailed analysis of the Commission's reasoning see page 192 of this issue.

An interesting and important sidelight to the decision, however, is a statement from Wage-Hour Administrator Phillip B. Fleming pointing out that exemptions from the 40-hour work week do not become effective until such time as the ICC actually prescribes regulations for these classes of workers.

"I wish also to point out," General Fleming continued, "that at least two courts have already held that in suits under section 16(b), courts may determine what employees lie within the Commission's power to prescribe hours of service and may reach decisions different from those reached by the Commission."

ATA Meeting May 5-7

The Second Annual Spring Forum of the Safety and Operations Section, American

Trucking Associations, Inc., will be held at the Continental Hotel, Kansas City, Mo., on May 5, 6, and 7. On the tentative program for May 5 is a message from Ted Rodgers; a paper on the "Psychology of Personnel Management" (speaker to be announced); "Economizing on Operating Expense—Fuel and Lubrication," by R. J. S. Piggott and a symposium on brakes and brake performance.

On May 6th, E. C. Van Horn will speak on "Scientific Testing of Drivers for Safety," followed by papers on "Handling of Minor Accidents" and "Keeping Up to Date in Preventive Maintenance." "Programs of Preventive Maintenance for Various Sizes and Types of Fleets" will also be a speaker's subject.

The "Ascertainment and Handling of Witnesses" by Dwight McCracken, "Safety in the Terminal," by W. Robert Smith, and a luncheon address on the "Safety Man's Bag of Tricks" will be on the third day's program.

Utility Conference April 22-23

The American Gas Association with co-operation of the EEI and SAE will hold the Spring Conference of the Committee on Operation of Public Utility Motor Vehicles at the William Penn Hotel, Pittsburgh, Pa., on April 22 and 23. There will be five papers on motor vehicle transportation problems as they affect public utility operators which are open to fleet operators and a closed session for public utility operators only.

OPM to Warn of Wage Law Changes

Prospective bidders on government contracts are to be advised in advance whether there may be a change in the legal wages of their industries and when the change, if made, will go into effect. This new government policy, announced by Donald M. Nelson, OPM Director of Purchases, was adopted at a conference of officials of the Wage and Hour Division and the Division of Public Contracts, Department of Labor, with officers of the Quartermaster Corps and the OPM Division of Purchases.

The machinery of setting industry minimum wages rates under the Wage-Hour and the Walsh-Healey Acts will remain unchanged, but hereafter dates on which wage determinations will go into effect will be set after consultation between officials of the Labor Department and the Division of Purchases.

Railway Express Uses Synthetic Tires

By equipping certain light units of its motor truck fleet with synthetic rubber tires, Railway Express Agency is participating in a voluntary movement to encourage the development of a "stand-by" synthetic rubber industry capable of emergency expansion.

A number of tires made with Ameripol, the synthetic rubber created by the B. F. Goodrich company from petroleum, natural gas, soap and air, have been purchased and are being apportioned among the various districts.

Business Briefs

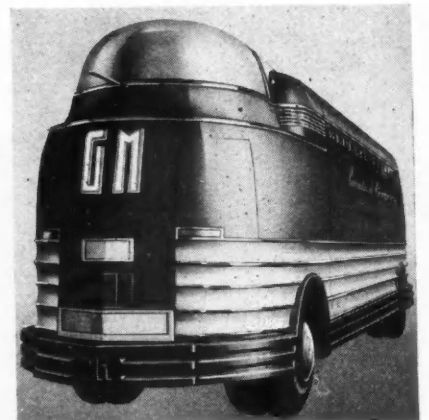
The Bendix-Westinghouse Automotive Air Brake Co. has announced the opening of a new St. Louis office, located at 718 Central Terminal Bldg., which will handle all business contacts of the Bendix-Westinghouse Co. in the southwestern territory including those formerly handled through the office of the Westinghouse Air Brake Co. D. R. Brehm is in charge of the St. Louis office and will also have jurisdiction over the Dallas and Memphis districts.

Net earnings for 1940 of \$1,952,727 and total sales amounting to \$37,573,956 were reported by the White Motor Co., Cleveland, Ohio. Both earnings and sales established a new 11-year high and were the best since 1929.

The Wolf's Head Oil Refining Co. (ex Wolverine-Empire Refining Co.), Oil City, Pa., has moved its main office to larger quarters in a new building on Seneca St. According to A. W. Scott, vice-president, the move was made necessary through greatly increased business.

The latest addition to the main factories of the General Motors Truck and Coach Div. of the Yellow Truck & Coach Mfg. Co., Pontiac, Mich., is a single story building of approximately 40,000 sq. ft. It will

(TURN TO PAGE 74, PLEASE)



Last month's "Body of the Month" feature (pages 32-33) showed pictures of the new General Motors Futur-Liner. Although much emphasis was placed on the Differential dual front wheels, the experimental model from which our artist worked was not so equipped. Herewith a more exact reproduction of the front-end appearance.

"3,000,000 TROUBLE-FREE MILES

NO
Gears Replaced

NO
Gum Problem

NO
Corrosion Trouble

With LUBRI-ZOL,"
Says Fleet Superintendent of
World's Largest Diaper Service



Some of the delivery trucks of the famous General Diaper Service, the world's largest company of its kind, located in Elmhurst, Long Is., N.Y.—all maintained with Lubri-Zol lubricants.

GENERAL DIAPER SERVICE

79-55 ALBION STREET • ELMHURST, N. Y. C.

New York
Havenport 4-7374

New Jersey
Waverly 1-2113

March 4, 1941

Windsor
Tuckahoe 3034

The Lubri-Zol Corporation
Cleveland, Ohio

Gentlemen:

For the past five years we have been using Lubri-Zol Extreme Pressure Gear and Chassis Lubricants, and Wheel Bearing Grease in our fleet of 60 units. The Fleet averages about 600,000 miles a year in city and suburban delivery service.

The three million miles we have run with Lubri-Zol have been unusually free of trouble. We have not had to replace a single gear, shackle, or wheel bearing due to lubrication failures. Inspection of transmissions and differentials have never shown any trace of corrosion or gum deposits. Frozen shackles are unheard of in our operation. We've yet to have any trouble with our wheel bearings.

In short, our experience with Lubri-Zol products has been so good that we are glad to recommend them to other fleet operators.

Very truly yours

GENERAL DIAPER SERVICE

Arthur J. Bennett
Fleet Superintendent

AJB:TS

Read Mr. Bennett's letter. Then note these important points:

City delivery means hundreds of stops and starts every day. That's hard on gears. Lubri-Zol E. P. Gear Lubricant protects gears from wear.

Short runs between stops mean low engine temperatures—conducive to sludge formation in crankcases. Lubri-Zol processing of motor oil practically eliminates sludge deposits.

Quick starts and short runs ordinarily mean poor lubrication of close clearances in upper cylinder areas—cause excessive wear, ring-filling, gum accumulation and other oxidation problems. Lubri-Zol-processed oil spreads a thin tough film in closest clearances to prevent wear. The special processing of Lubri-Zol Motor Oil protects against corrosion. As it is an exceptionally stable product, troubles from oxidation (gum, varnish, sludge) are kept at a minimum.

Lubri-Zol can help you, too. Let our fleet engineer tell you how. No obligation. Write today. The Lubri-Zol Corporation, Cleveland, Ohio.

Fully Protected by U. S. and Foreign Patents

LUBRI ZOL

REG. U.S. PAT. OFF.

*Buy your oil on
the cost per mile...
and save... with*

NEWSCAST

(CONTINUED FROM PAGE 72)

be completed in early April and will be used for final inspection and adjustment of Government trucks.

The White Motor Co., Cleveland, Ohio, has set up three new regional offices covering the Cleveland, Chicago and Kansas City territories respectively. The Cleveland office is under the direction of M. H. Anderson, L. B. Gilbert heads up the Chicago office and W. E. Burgess is in charge of the Kansas City office. These additions bring the company's regional offices to a total of nine.

The initial \$3,000,000 defense expansion program, begun in 1940 by the Timken Roller Bearing Co., Canton, Ohio, has been expanded in recent months until at present it has reached the \$4,000,000 mark. Approximately one-fourth of this amount has gone into new building construction and three-fourth into new machinery and equipment. Additional projected expenditures will bring the Timken total to \$5,000,000 by this summer.

The annual report of the Autocar Co., Ardmore, Pa., shows a profit of \$421,833, after deducting all taxes, compared with \$319,173 in 1939. According to Robert P. Page, president, normal sales to commercial customers, exclusive of defense orders, have shown a steady growth and at the close of last year's business, the company had more than \$20,000,000 of unfilled orders on its books, including those for national defense.

The Kester Solder Co., Chicago, Ill., has purchased the property now occupied by its Newark, N. J., division, located at Ferguson and Clover Sts. in Newark. H. E. Reed will continue as manager of the Newark division.

Young Windows, manufacturer of Constant Balance window regulators, 33 W. 60th St., New York, N. Y., has reported that in 1940 its business was double that of 1939, continuing the progress of the past four years since the company's inception.

Federal Names New Works Manager

John D. Porter, for the past seven years production manager of the Detroit Truck Division of Dodge Motor Co., has been named to the post of works manager of Federal Motor Truck Co., Detroit. Mean-



John D. Porter,
recently appointed
works manager of
Federal Motor
Truck Co., Detroit

while things are humming at the Federal plant. In addition to increased foreign and domestic business, the company reports unfilled orders from the Army, Navy and Air Corps totaling \$5,180,000.

Getting Personal

Colonel J. L. Cockrum, vice-president in charge of sales of the Seiberling Rubber Co., has been elected to the company's board of directors. He fills the vacancy created by the retirement of Robert Guenther, who will continue as the company's general counsel.

E. J. McPhee has been promoted to the office of general superintendent, Dodge Truck Division, Chrysler Corp.



O. R. McDonald has been appointed sales promotion manager of the Brunner Mfg. Co., Utica, N. Y. His headquarters will be in Utica, N. Y.

Seth Klein, for many years starter at the Indianapolis Speedway, returns to that city as assistant to the vice-president for Marmon Herrington.



F. H. Lindus, formerly Los Angeles branch manager in charge of the service-sales division of the Timken Roller Bearing Co., has been transferred to the home office at Canton, Ohio, where he is engaged in promotional work. L. J. Halderman, service-sales branch manager at Chicago, has filled the vacancy in the Los Angeles branch, while Jack Gelomb, formerly manager of the Detroit service-sales division, has moved to Chicago. Joseph Jesseph takes Mr. Gelomb's place in the Detroit office.



Dr. Tracy C. Jarrett, newly named chief metallurgist for the American Hammered Piston Ring Division of Koppers Co.

Lt. Col. Louis H. Frohman, executive of H. B. LeQuatte, Inc., New York advertising agency, has been ordered to active duty for one year at Camp Lee, Va. Col. Frohman retains his contact with the automotive industry while in the service, as he is in command of a Motor Transport Battalion.

Forest C. Hile, formerly commercial car brake engineer with the Bendix Products Division of Bendix Aviation Corp., is now a member of the engineering staff of the Warner Electric Brake Mfg. Co., Beloit, Wis.



Ethyl Gasoline Corp. has announced the appointment of Joseph A. Costello (left) and Alan C. Tully as managers of the New York and Atlanta divisions respectively. Sidney T. Pruitt is assistant manager at Dayton, Ohio.

J. R. Ackerman is the new director of merchandising and advertising for the Dodge Division of Chrysler Corp.



F. F. (Mike) McKinney, formerly Ford truck account executive with N. W. Ayer & Co., at Detroit, has opened a Ford dealership known as McKinney Motor Sales, at Marion, Ohio.

J. L. Koubek, new sales manager of the Guide Lamp Division of General Motors. Two new assistants are John Hughel and S. R. Conwell



D. C. Gaskin has been appointed vice-president and general manager of the Studebaker Corp. of Canada, Ltd. His promotion follows the transfer of M. S. Brooks to an executive position with the Studebaker organization in South Bend, Ind.

J. L. Parker, formerly with Sherwin-Williams, has joined the Lowe Bros. Co., paint manufacturers at Dayton, Ohio, in the capacity of manager of automotive sales.

H. G. Barnes, newly-named vice-president and general manager of Gould Commercial Division, National Battery Co., Depew, N. Y.



Art Kanaske, who resigned recently as sales manager of Lube-X System, Inc., has joined Behel and Waldie, Chicago advertising agency.

MORE NEWS IN BACK OF BOOK



THE MARK OF QUALITY

"A. W." is the sign of hidden value that steel buyers know and recognize. "A. W." is the symbol of one complete control—from Mine to Consumer. We can furnish Carbon, Copper or Alloy flat-rolled products—in any open hearth analysis to meet your specifications. Welding qualities, toughness, abrasion resistance, ductility . . . Ingots, Billets, Blooms, Slabs, Sheared Plates, Hot Rolled Sheets. Floor Plates for every flooring need. Steel Cut Nails in all types and sizes. "Swede" Pig Iron—Foundry, Malleable, Basic, Bessemer. "A.W." Products have been an accepted standard for steel buyers for more than a century.

ALAN WOOD STEEL COMPANY, CONSHOHOCKEN, PA.

SINCE 1826 : : DISTRICT OFFICES AND REPRESENTATIVES—Philadelphia, New York, Boston, Atlanta, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Houston, New Orleans, St. Paul, Pittsburgh, Roanoke, Sanford, N. C., St. Louis, Los Angeles, San Francisco, Seattle, Montreal.

SHOWCASE OF NEW PRODUCTS



Bolser Low-Cost Re-Pak-It Filters and Cartridges

A phenomenal money-saving filter and filter cartridge has just been announced by The Bolser Corp., Cedar Falls, Iowa, manufacturers of truck flares and truck safety equipment. According to the manufacturer the Bolser Re-Pak-It filter cartridge is available for use in all popular filters—both sock and can type—and it allows re-packing the cartridge with the same filtering material that is used by practically all filter cartridges. This Re-Pak-It feature eliminates the necessity of throwing away the complete filter cartridge when a change



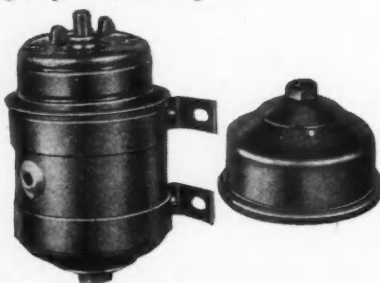
becomes advisable. Savings up to 90% of ordinary filter cartridge costs are effected with the Re-Pak-It cartridge.

Bolser special Hi-Efficiency Filter Fibre is furnished in 6 oz. and 8 oz. factory-sealed packages—and is also available in 50 lb. and 100 lb. bales, together with a special scale that quickly indicates amount of filter fibre required for all popular filters.

In addition to the Re-Pak-It cartridge for popular filters, The Bolser Corp. is building a complete Re-Pak-It filter which, it is claimed, combines a built-in bi-pass valve and operates with a sump-type cartridge for easy, efficient cleaning and greater operating economy. The Re-Pak-It filter also features Visible Proof, giving positive proof of operation.

Of special interest is the Re-Pak-It filter designed for the Chevrolet engine. It is quickly installed without any brackets or

intricate mountings and becomes an integral part of the engine.



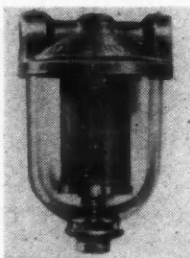
Complete information and prices can be had by addressing The Bolser Corp., Cedar Falls, Iowa.

Autopulse Pump and Strainers

A newly designed electric fuel pump known as model 400 has been announced by the Autopulse Corp., Detroit, Mich. The new unit is built with an integral screen filter, disk-type optional, and a per-



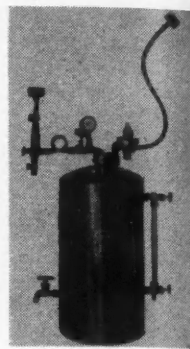
manent air dome to insure a smooth flow of fuel. It delivers up to 28 gal. per hour through an average size passenger car carburetor inlet, operation being controlled by carburetor back-pressure.



In addition to the new pump, a line of fuel strainers has been introduced. They are conventional in design with the exception of the bowls, which may be of drawn steel or drawn brass in place of glass.

Rotawasher Jetmixer Attachment

A process for the thorough cleaning of automobile and truck chassis, without the use of steam or chemicals, has been developed by the Rotawasher Corp., Cleveland, Ohio. This process, which uses a special attachment known as the Jetmixer in connection with the standard Rotawasher, has undergone thorough and exhaustive test in actual service over a considerable period of time and has been found to be economical, rapid and efficient.



The Rotawasher Jetmixer introduces a small amount of kerosene into the water passing through the high pressure pump. This emulsified oil, one of the best solvents of grease and dirt known, is propelled with great force against the parts to be cleaned. Thorough cleaning is the result. The finish is not affected and cleaning costs are materially reduced.

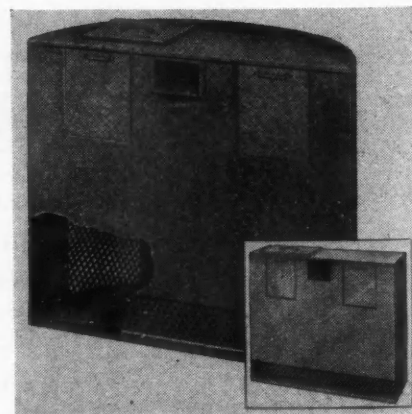
The Jetmixer can be used with any Rotawasher.

New Chassis Dynamometer

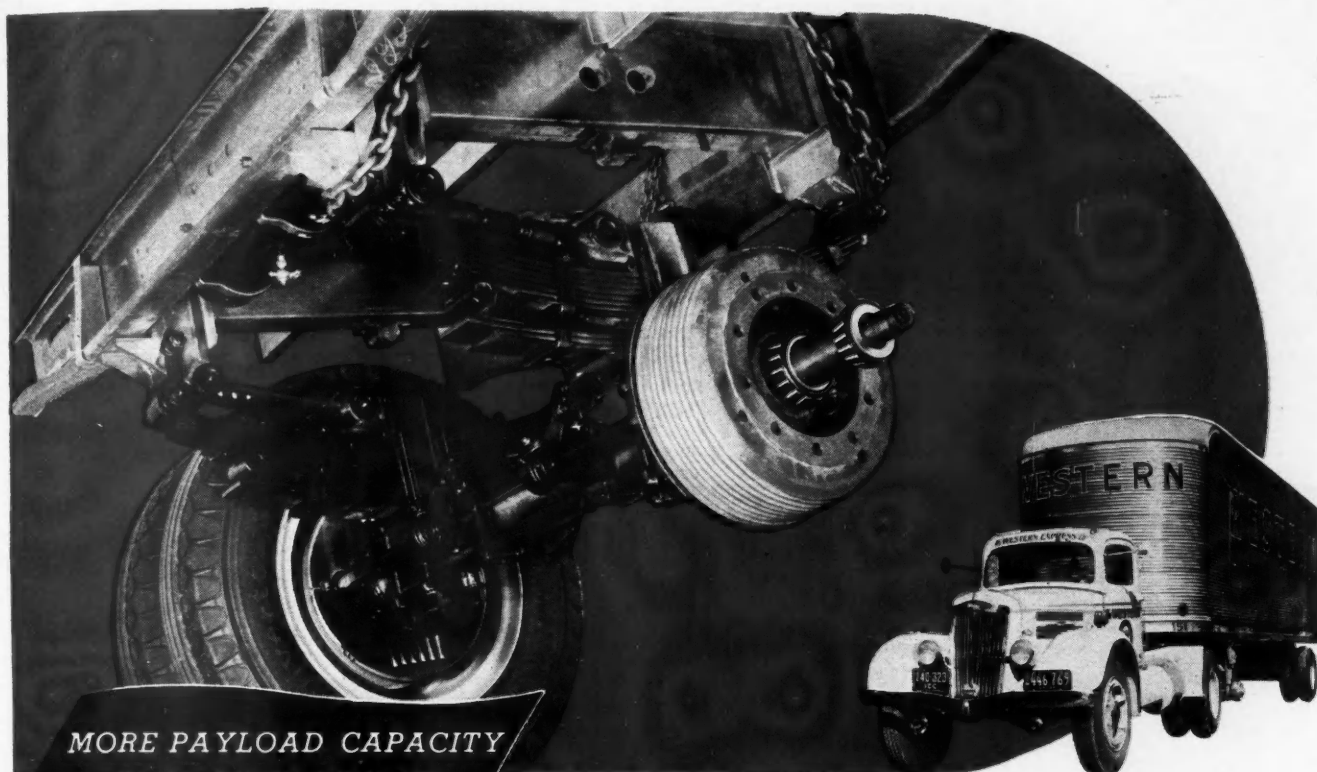
Known as the Otis Proving Stand, a new electric chassis dynamometer is being offered by the Otis Proving Stand Corp., 40 Rector St., New York, N. Y. Only a short time is required to attach the test connections to the automotive units and the results of the test are quickly obtained from the large dials and meters on the instrument panel. The unit is designed to cover both capacity and dimension requirements of all standard passenger and commercial vehicles, including Diesel and gas-electric powered units.

D & G Produce Refrigerator

A new produce refrigerator unit, designed for trucks and trailers with either round or square fronts, has been made



available by Dromgold & Glenn, 332 South Michigan Ave., Chicago, Ill. Chilled air is driven from the rear end of a chute (TURN TO PAGE 118, PLEASE)



MORE PAYLOAD CAPACITY
LESS TRAILER WEIGHT
INCREASED STRENGTH
PLUS—

MEEHANITE BRAKE DRUMS IN FRUEHAUF STAINLESS STEEL TRAILERS

Fruehauf Stainless Steel Trailers are the result of the combination of modern, *better* materials with modern production-line construction methods. Stainless steel for maximum strength, minimum weight, "Shotweld" fabrication for sturdy dependability, and **MEEHANITE** brake drums for smooth, safe, sure stopping.

MEEHANITE DRUMS OFFER:

1. Better lining wear.
2. Freedom from heat checks.
3. Higher safety factor.



WRITE FOR Bulletin
No. 13 "Meehanite in
Industry"

When You Specify MEEHANITE You Profit from Over
2½ Million Man Hours' Research in Cast Metals.

Meehanite Research Institute • 311 ROSS STREET • PITTSBURGH, PA.



Take Your Casting Problems to a Meehanite Foundry!

Ansonia, Conn.	Farrel-Birmingham Co., Inc.
Bethayres, Pa.	H. W. Butterworth & Sons Co.
Bridgewater, Mass.	The Henry Perkins Co.
Buffalo, N. Y.	Pohlman Foundry Co., Inc.
Charleston, W. Va.	Kanawha Manufacturing Co.
Chattanooga, Tenn.	Ross-Meehan Foundries
Chicago, Ill.	Greenlee Foundry Company
Cincinnati, Ohio	Cincinnati Grinders Incorporated
Cincinnati, Ohio	The Cincinnati Milling Machine Co.
Cleveland, Ohio	Fulton Foundry & Machine Co.
Denver, Colo.	The Stearns-Roger Mfg. Co.
Detroit, Mich.	Atlas Foundry Co.
Flint, Mich.	General Foundry & Mfg. Company
Hamilton, Ohio	Hamilton Foundry & Machine Co.
Irvington, N. J.	Barnett Foundry & Machine Co.
Los Angeles, Calif.	Kinney Iron Works

Milwaukee, Wis.	Koehring Company
Mt. Vernon, Ohio, Grove City, Pa.	Cooper-Bessemer Corporation
New York, N. Y.	The American Brake Shoe & Foundry Co.
Oakland, Calif.	Vulcan Foundry Company
Orillia, Canada	E. Long, Ltd.
Philadelphia, Pa.	Florence Pipe Foundry & Machine Co., (R. D. Wood Company, Selling Agents)
Phillipsburg, N. J.	Warren Foundry & Pipe Corp.
Pittsburgh, Pa.	Meehanite Metal Corporation
Pittsburgh, Pa.	Rosedale Foundry & Machine Co.
Rochester, N. Y.	American Laundry Machinery Co.
St. Louis, Mo.	Banner Iron Works
St. Paul, Minn.	Valley Iron Works
London, Eng.	The International Meehanite Metal Co., Ltd.
Waterloo, N. S. W.	Australian Meehanite Metal Co., Ltd.
Johannesburg, South Africa	Meehanite Metal Co. (S.A.) (Pty.) Ltd.



This "granddaddy" combination used by a Canton, Ohio, coal mining company, features a semi- and full hopper-type dump trailer made by the Ohio Body Mfg. Co., at Ashland. Each 14-yd. trailer carries approximately 14 tons. The hand-operated hopper-dump saves cost and weight. (The big "semi" weighs 6575 lb.)

BETTER REFRIGERATION at LOWER COST...



...plus day
in and day
out de-
penda-
bility!

NO COILS OR FINS TO DEFROST . . . Bronze Spray Nozzles are self cleaning, no loss of efficiency through frost insulation, no impeded air flow.

CLUTCH FOR EASY STARTING . . . disconnects mechanism from motor.

BALL AND ROLLER BEARINGS THROUGHOUT . . . minimum wear, minimum attention, minimum friction loss.

FACTORY SEALED PUMP . . . centrifugal type, bronze fitted, self priming, roller bearing equipped. Requires no attention.

60 SECOND AIR RE-CIRCULATION . . . in 24 foot trailer by 8" double squirrel cage type blower.

DEPENDABLE ENGINE . . . I H. P., 4 cycle, standard make, fitted with special clutch. Plenty of reserve power.

SMALL FLOOR SPACE YET AMPLE ICE CAPACITY . . . needs only 16" x 48" Chamber of copper bearing steel, hot dipped galvanized, holds 600 lbs. of ice.

A UNIT FOR EVERY TYPE OF SERVICE. In addition to the Spray Type shown, D & G also offer a Coil Type built to same quality standards plus a special unit for produce hauling.

OUTSTANDING PERFORMANCE PROVEN! Tests made with a standard type 24 foot trailer in August, 1939 (outside temperatures from 80° to 95°), using 500 lbs. of ice, 20% salt, showed interior temperatures of 36° in approximately one hour! (Photostatic copy of recording thermometer chart sent on request.)

PRODUCE HAULERS! Get the facts on the new D & G Unit (2000 lbs. ice capacity) designed especially for hauling beans, strawberries and other produce.

WRITE FOR COMPLETE FACTS AND PRICES

DROMGOLD & GLENN
1419 McCORMICK BLDG. CHICAGO

REFRIGERATION DATA

Thermal Conductivity of Insulating Materials

Thermal conductivity of various insulating materials per hour per square foot per degree Fahrenheit per inch of thickness.

Balsam Wool	26
Celotex	31
Corkboard (5.4 lb. per cu. ft.)	25
Corkboard (7 lb. per cu. ft.)	27
Corkboard (10.6 lb. per cu. ft.)	30
Corning Wool (1½ lb. per cu. ft.)	27
Dry-Zero	24
Lata-Balsa	35
Masonite	33
Palco Wool	26
Rock Cork	33
Temlock	33

Temperatures Recommended for Transportation and Retail Storage

UNFROZEN

VEGETABLES		Oranges	35-45
Asparagus	33-34	Peaches	35-40
Beans (green)	33-34	Pears	32-34
Beets	32-40	Plums	32-36
Broccoli	32-34	Raspberries	35-40
Cabbage	32-36	Strawberries	35-40
Carrots	33-36		
Cauliflower	32-34	MEATS AND FISH	
Celery	32-34	Bacon	30-35
Corn (green)	36-38	Beef (fresh)	32-40
Cucumbers	36-40	Eggs	33-36
Lettuce	32-40	Fish (fresh)	32-40
Onions	32-36	Lamb	32-36
Peas (green)	32-36	Mutton	32-36
Potatoes	35-40	Oysters (shell)	30-35
Potatoes (sweet)	50-55	Pork (fresh)	30-34
Radishes	32-36	Poultry	28-30
Squash	33-36	Veal	35-40
Tomatoes	35-40		

DAIRY PRODUCTS

Butter	20-35
Cheese	35-40
Milk (sweet)	32-36
Milk (butter)	32-40

FROZEN FOODS

Eggs	10-15
Fish	10-20
Fruits in syrup	10-20
Ice Cream	5-10
Meats	10-20
Vegetables	5-10

Courtesy American Society Refrigerating Engineers.

Insulated Walls Recommended

(Wall conductivities desirable for handling various types of perishables.)

Type of Truck	B.T.U. per hour per degree F. per square foot
Bakery, candy and bread trucks	.60
Trucks for bulk and smoked meats	.15 to .30
Trucks for sausage and fresh cut meats	.10 to .20
Ice cream, quick-frozen food trucks	.06 to .05
Trucks for solid carbon-dioxide transport	.03 to .05



7 HOURS FOR NEW RINGS

or 50 minutes for installing an AC Oil Filter

Clogged oil control ring slots,—with their resulting loss of compression, and oil pumping, carbon accumulation, and reduced gas economy,—*can be prevented*. All it takes is an AC Oil Filter. And that's a lot cheaper than an overhaul!

AC or Argo Oil Filters trap ring-clogging sludge and dirt *before* they have a chance to do their dirty work.

Actual highway tests prove that these filters make a big difference in engine mileage between overhauls. These tests also prove better compression with filtered oil—and improved gas and oil mileage.

No Filters Keep Oil Cleaner

AC and Argo elements cannot channel. Water and acid cannot destroy their efficiency. Neither dirt nor sludge can pass through them. And, they remove discoloration.

With AC or Argo Filters, you're sure of the best filter protection money can buy.

AC OIL FILTERS are standard or optional equipment on—BUICK, CADILLAC V-16, OLDSMOBILE*, and PONTIAC* Motor Cars
GMC Trucks • GREYHOUND and FLXIBLE Buses • ALLIS-CHALMERS, EAGLE, GRAVELY, and READY POWER Tractors • ATLAS, IMPERIAL and GM DIESELS • CONTINENTAL and GRAY MARINE MOTORS • MARION SHOVELS
KOEHRING ROAD MACHINERY • BROWN and SHARPE MACHINERY,—THESE ARE SOME OF THE VEHICLES, POWER PLANTS, AND MACHINES ON WHICH AC OIL FILTERS ARE USED FOR EQUIPMENT.

*Optional

AC OIL FILTERS KEEP YOUR EQUIPMENT ON THE ROAD

COMMERCIAL CAR JOURNAL
APRIL, 1941

When writing to advertisers please mention Commercial Car Journal



Your AC Supplier can furnish
all commercial sizes

ICC SAFETY REGULATIONS

(Continued from Page 31)

vehicle and as near the top thereof as practicable.

3.3109 *Side-marker lamps may be combined with clearance lamps.*—Side-marker lamps may be in combination with clearance lamps and may use the same light source.

3.3110 *Color of lighting devices.*—The color of lighting devices shall be as follows:

(a) All front clearance lamps, and all side-marker lamps except the one on each side at or near the rear, on any bus, truck,

tractor, semitrailer, full trailer, or pole trailer, shall when lighted display an amber color.

(b) No red lighting device of any character shall be mounted at any place other than on or near the rear on any bus, truck, tractor, semitrailer, full trailer, or pole trailer.

(c) All rear clearance lamps, the side-marker lamp on each side at or near the rear, and any other lamps mounted on the rear, on any bus, truck, tractor, semitrailer, full trailer, or pole trailer, shall

when lighted display a red color except as permitted by paragraphs (d), (e), (f), and (g) of this rule.

(d) The stop light or other warning device on the rear of any motor vehicle may be red or amber.

(e) The color blue or purple may be used on the front and rear of any motor vehicle in a device to indicate the speed at which the motor vehicle is moving.

(f) Backing lights of any color may be mounted on the rear of any motor vehicle if the switch controlling such lights be so arranged that they may be turned on only when the motor vehicle is in reverse gear. Such backing lights when unlighted shall be so covered or otherwise arranged as not to reflect objectionable glare in the eyes of drivers of vehicles approaching from the rear.

(g) No provision of this rule shall be so construed as to prohibit the use of any white light or lights for the purpose of illuminating license plates.

3.3111 *Visibility of clearance, side-marker, and tail lamps.*—Clearance, side-marker, and tail lamps shall when lighted be capable of being seen at a distance of 500 feet under normal atmospheric conditions during the time when lights are required. The light from front clearance lamps shall be visible to the front, from side-marker lamps to the side, and from rear clearance and tail lamps to the rear, of the motor vehicle.

3.3112 *Operation and visibility of stop light.*—Stop lights shall be actuated by application of the service (foot) brakes and shall be capable of being seen and distinguished from a distance of 100 feet to the rear of the motor vehicle in normal daylight; but shall not project a glaring or dazzling light. The stop light may be incorporated with the tail lamp.

3.3113 *Mounting of reflectors.*—No reflector required by these regulations shall be mounted upon the motor vehicle at a height to exceed 60 inches, nor less than 24 inches, above the ground on which the motor vehicle stands.

3.3114 *Visibility of reflectors.*—Every reflector shall be of such size and characteristics as to be readily visible at night from all distances within 500 feet to 50 feet from the motor vehicle when directly in front of a normal headlight beam.

NOTE.—Any reflex reflector approved by any of the States listed below, or by any other State having equivalent or superior requirements, or any reflex reflector meeting the requirements as set forth in "S. A. E. Recommended Practice" for reflex reflectors, as promulgated by the Society of Automotive Engineers, 29 West 39th St., New York, N. Y., shall be deemed to meet the requirements of Rule 3.3114 with respect to performance characteristics. The listed States are New Hampshire, Massachusetts, Rhode Island, New York, and California.

3.3115 *Reflectors incorporated with tail lamps.*—One or both of the required rear red reflectors may be incorporated within the tail lamp or tail lamps, provided that any such tail lamps be located within the height limits specified for reflectors.

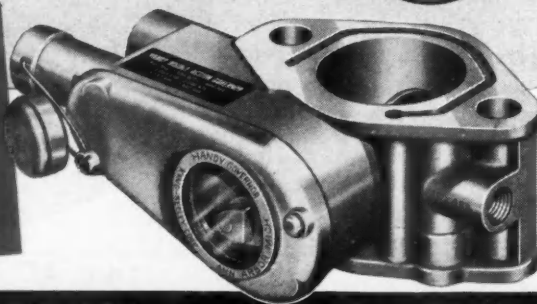
(TURN TO PAGE 90, PLEASE)

Why THE HANDY GOVERNOR IS SO POPULAR

- 1 Wide range of governed speeds (1200-3300) RPM) without the necessity of any change in governor assembly.
- 2 Because of piston stabilizer and damping weight there is no flutter.
- 3 It has stability at no load without sacrificing any sensitivity at full load.
- 4 Sturdy corrosion-free construction.
- 5 Simple mechanical design—only one moving shaft.
- 6 Stainless steel needle bearings that insure instant response.
- 7 Cam surface accurately machined.
- 8 Readily applicable to practically any engine.
- 9 Priced competitively.



NO OTHER GOVERNOR CAN GIVE YOU ALL THESE ADVANTAGES



KING-SEELEY CORPORATION • Ann Arbor, Michigan

HANDY *Visible Action* GOVERNOR

World's Largest Manufacturers of Automotive Governors

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

Now My Shop Gang is Nursing THE BIG SHOT'S OWN CAR!



We generally keep the Boss happy on our units, but when it came to that job of his, he'd say, "You guys can't handle passenger-car stuff; you're only used to heavy work."



Some time back, I get in with American Brakeblok on their 3 types of heavy-duty lining. We fill in their Advisory Service form; back come recommendations for our manual, vacuum-booster, air brakes.



I replace with American Brakeblok Lining, using recommended types for each job. Mileage and cost records improve. Drivers remark about their swell soft-pedal brakes—the news gets to the Boss.



He blows down here, gets knocked back on his heels when I show him we're servicing everything from 1/2-ton up with different types of one make of brake lining—and reducing costs at the same time!



The pay-off comes this morning. This long shiny hood kinda sneaks in; the Boss steps up, grins and says, "Joe, how about putting whatever American Brakeblok recommends on my car?" Now, I tell my friends, "Write American Brakeblok."

Copyright, 1941, The American Brake Shoe & Foundry Co.

American Brakeblok

TRADE MARK REG. U.S. PAT. OFF.

BRAKE LINING

AMERICAN BRAKEBLOK



Master Stocks in 38 NAPA Warehouses. Jobbers everywhere give prompt service.

American Brakeblok Division of The American Brake Shoe & Foundry Co., Detroit, Michigan

3 HEAVY-DUTY TYPES EACH BEST FOR ITS OWN JOB

ICC SAFETY REGULATIONS

(Continued from Page 88)

Whether or not the rear reflectors are incorporated in tail lamps, they shall be located on the rear of the motor vehicle at opposite sides and shall also meet the requirements as to visibility set forth in Rule 3.3114.

3.3116 *Color of reflectors.*—All reflectors mounted on any bus, truck, tractor, semi-trailer, full trailer, or pole trailer, shall reflect an amber color, except those placed on the rear and on the sides nearest to the rear thereof, which shall reflect red.

3.3117 *Detachable electrical connections.*

—Means for establishing electric connection between towing and towed vehicles, and other detachable electric connections, shall be mechanically and electrically adequate, free of short or open circuits. Suitable provision shall be made in every detachable connection to afford reasonable assurance against accidental disconnection. Precaution shall be taken to provide sufficient slack in the connecting wire or cable without twisting or kinking thereof.

3.32 BRAKES ON ALL VEHICLES.

3.321 ADEQUACY OF BRAKES.—Every bus,

truck, and tractor shall be equipped with brakes adequate to control the movement of, and to stop and to hold, such vehicle, including two separate means of applying the brakes. At least one such braking means shall be a mechanical hand (parking) brake which shall employ a ratchet and pawl or other suitable locking and releasing mechanism to insure the setting and holding of at least one set of brakes. If these two separate means of applying the brakes are connected in any way, they shall be so constructed that failure of any one part of the operating mechanism shall not leave the vehicle without brakes adequate to stop and to hold such vehicle.

3.322 BRAKES ON COMBINATIONS OF MOTOR VEHICLES.—Every combination of motor vehicles shall be equipped with brakes upon one or more of such motor vehicles, adequate to stop and to hold such combination of motor vehicles.

3.323 BRAKE PERFORMANCE.—Every motor vehicle or combination of motor vehicles, according to its type, shall be capable at all times and under all conditions of loading, of stopping on a dry, smooth, level road free from loose material, upon application of the service (foot) brake, within the distances specified below, or shall be capable of decelerating at a sustained rate corresponding to these distances:

	Foot to stop from 20 miles per hour	Deceleration in feet per second per second (nearest ½ foot)
Vehicles or combinations of vehicles having brakes on all wheels.....	30	14
Vehicles or combinations of vehicles not having brakes on all wheels.....	45	9.5

NOTE.—The means used for enforcement purposes to determine if a motor vehicle or combination of motor vehicles is in compliance with the provisions of the above paragraph, will be by an instrument or a machine capable of being read in feet to stop from 20 miles per hour, deceleration in feet per second per second, or other equivalent units; the manner of use of these instruments or machines to be prescribed for each type of instrument or machine so used.

3.324 APPLICATION OF BRAKES ON COMBINATIONS OF MOTOR VEHICLES.—In any combination of motor vehicles, means shall be provided for applying the rearmost trailer brakes, of any trailer equipped with brakes, in approximate synchronism with the brakes on the towing vehicle and developing the required braking effort on the rearmost wheels at the fastest rate; or means shall be provided for applying braking effort first on the rearmost trailer equipped with brakes; or both of the above means capable of being used alternatively or conjunctively may be employed.

3.325 INDEPENDENCE OF BRAKING CONTROLS.—Means of braking, the operating controls of which shall be independent of the operating controls of the service (foot) brake, shall be provided to hold any motor



Over 25,000

AMERICAN SAFETY TANKS

are
Protecting
LIVES AND PROPERTY
Against
FIRE!

U. S. Patent 2090197

American Safety Tank Co.

Underwriters' Laboratories, Inc. A.U. 1302

KANSAS CITY, MISSOURI

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

vehicle or combination of motor vehicles stationary on any up or down grade upon which it is to be operated.

3.326 ADEQUACY OF BRAKE TUBING AND HOSE.—All brake tubing and brake hose shall be adequate in material and construction to insure proper continued functioning; sufficiently long and flexible to accommodate without damage all normal motions of the parts to which they are attached; and suitably secured and protected against chafing or other mechanical injury.

3.327 BRAKE TUBING AND HOSE CONNECTIONS.—All connections for compressed air, vacuum or hydraulic braking systems shall be adequate in material and construction to insure proper continued functioning; and shall be so designed, constructed, and installed as to insure, when properly connected, an attachment free of leaks, constrictions, or other defects. Suitable provision shall be made in every detachable connection to afford reasonable assurance against accidental disconnection.

3.328 BRAKES TO BE OPERATIVE AT ALL TIMES.—All brakes with which motor vehicles are equipped shall be operative at all times. Means may be used for reducing the braking effort on the front wheels of any bus, truck, or tractor, provided that no such means shall be capable of making the front wheel brakes entirely inoperative.

3.33 SAFETY GLASS ON ALL VEHICLES.

3.331 REPLACEMENTS OF GLASS.—Whenever glass is replaced in the windshield and in the window next to the driver, in a bus, truck, or tractor; or in the doors and rear windows of a bus; or in the rear window of the driving compartment of a truck or tractor, the replacement shall be made with safety glass, which shall conform to the requirements contained in the "American Standard, Safety Code for Safety Glass for Glazing Motor Vehicles Operating on Land Highways, Z 26.1—1938," approved March 7, 1938, by the American Standards Association, 29 West 39th Street, New York, N. Y.

3.332 CASE-HARDENED GLASS PROHIBITED.—Case-hardened glass shall not be used for replacement purposes in any windshield, door, or window opening of any motor vehicle.

3.34 MISCELLANEOUS PARTS AND ACCESSORIES ON ALL VEHICLES.

3.341 WINDSHIELD WIPER.—Every motor vehicle having a windshield shall be equipped with at least one windshield wiper for cleaning rain, snow, or other moisture from the windshield in order to provide clear vision for the driver.

3.342 DEFROSTING DEVICE.—Every motor vehicle which is equipped with a windshield, when operating under conditions such that ice or frost would be likely to collect on the windshield, shall be equipped with a device or other means for preventing or removing such ice or frost.

3.343 REAR-VISION MIRROR.—Every truck, bus, and tractor shall be equipped with at least one rear-vision mirror, firmly attached to the motor vehicle and so located as to reflect to the driver a view of the highway to the rear.

3.344 HORN.—Every truck, bus, and tractor shall be equipped with a horn and actuating elements which shall be in such

condition as to give an adequate and reliable warning signal.

3.345 FUEL CONTAINERS.

3.3451 Fuel container not to project.—No part of any fuel tank or container or intake pipe shall project beyond the sides of the motor vehicle.

3.3452 Location of fuel container on bus.—The intake pipe of any fuel tank or container, or any such container itself, shall not be located within or above the passenger-carrying portion of any bus.

3.3453 Fuel containers of substantial construction.—Every fuel tank or container supplying fuel for the propulsion of any motor vehicle shall be of substantial con-

struction free from leaks and securely attached to the vehicle in a manner which constitutes good practice.

3.346 COUPLING DEVICES.

3.3461 Mounting of fifth wheel.—The lower half of every fifth wheel mounted on any tractor or dolly shall be securely and permanently affixed to the frame thereof by U-bolts or by other means providing at least equivalent security.

3.3462 Securing of fifth wheel parts.—The upper half of any fifth wheel shall be fastened as securely to the semitrailer as is required for the securing of the lower half to a tractor or dolly.

(TURN TO NEXT PAGE, PLEASE)

VAPOR LOCKED AGAIN? WHY DON'T YOU GET SMART AND INSTALL A STEWART-WARNER ELECTRIC FUEL PUMP?



**Delivers 15 gallons or more
per hour on less than
1 ampere of current!**

Do vapor-locks ever delay your trucks, interfere with schedules, cost you important money? Do as so many other fleet owners are doing, and end vapor-lock troubles with the economical, dependable Stewart-Warner Electric Fuel Pump!

Mounted at the tank, this pump boosts fuel to the carburetor under pressure. It's foolproof and troublefree; no rotating action; contact points sealed in a hydrogen-filled tube prevents sticking, pitting, or burning of points. Mail coupon for complete information!



**STEWART-WARNER MODEL 110-D
ELECTRIC FUEL PUMP**
No Piston!
No rotating motion!
Minimum wear!
Maximum service!

STEWART WARNER

**ELECTRIC
FUEL PUMP**

STEWART-WARNER CORPORATION
1876 Diversey Parkway, Chicago, Illinois

STEWART-WARNER CORPORATION
1876 Diversey Parkway, Chicago, Ill., Dept. D
Please send complete facts about the new Stewart-Warner Electric Fuel Pump for trucks.

Name
Address
City State
Firm Name

ICC SAFETY REGULATIONS

(Continued from page 91)

3.3463 Adequate locking of fifth wheel.—Locking means shall be provided in every fifth wheel mechanism such that the upper and lower halves may not be separated without its manual release. A release mechanism actuated by the driver from the cab shall be deemed to meet this requirement.

3.3464 Tow-bar.—Every full trailer shall be equipped with a tow-bar which shall be structurally adequate for any weight drawn, properly mounted, without excessive slack but with sufficient play to allow

for universal action of the connection, and provided with a suitable locking means to prevent accidental separation of the towed and towing motor vehicles.

3.3465 Tracking.—The tow-bar and its connections shall be so designed, constructed and installed, and the full trailer shall be so designed and constructed as to insure that the full trailer will follow substantially in the path of the towing vehicle and without whipping or swerving from side to side.

3.3466 Safety chains.—Every full trailer

shall be coupled with safety chains (stay chains or cables) to the motor vehicle by which it is to be towed, which devices together with their means of attachment shall be adequate to prevent the separation of the towed and towing vehicles in the event of failure of the tow-bar.

3.347 TIRES.—Tires shall be provided on every motor vehicle adequate to support the maximum gross weight thereof.

3.348 DRIVE SHAFT (PROPELLER SHAFT) PROTECTION FOR BUSES.—Where the drive shaft (propeller shaft) of any bus extends lengthways under the floor thereof, it shall be protected by means of at least one U-shaped guard or bracket at that end of the shaft which is provided with a sliding connection (spline or other such device) to prevent the whipping of the shaft in the event of failure thereof or of any of its component parts. A shaft contained within a torque tube shall not be deemed to require any such device.

3.349 EMERGENCY PARTS AND ACCESSORIES REQUIRED.

3.3491 On every bus, truck or tractor there shall be—

(a) At least one fire extinguisher, of a type inspected and labelled by Underwriters' Laboratories, Inc., 207 E. Ohio Street, Chicago, Ill., under Classification B, and utilizing an extinguishing agent which does not need protection from freezing, properly filled and securely mounted in a bracket. (Minimum size: one-quart carbon tetrachloride type, or two-pound carbon dioxide type.) This requirement shall not apply to any taxicab.

(b) One red lantern, when projecting loads are carried.

(c) One red cloth flag, not less than 12 inches square, when projecting loads are carried.

(d) At least one spare electric bulb for each kind of electric lamp used for any of the lighting devices required by these regulations.

(e) At least one spare electric fuse of each kind and size used for any of the electric lighting circuits on the motor vehicle.

(f) One set of tire chains, for all vehicles likely to encounter conditions requiring them.

(g) Three flares or three red electric lanterns; each flare (liquid-burning pot torch) or red electric lantern shall be capable when lighted of being seen and distinguished at a distance of 500 feet under normal atmospheric conditions at night time; each flare (pot torch) shall be capable of burning for not less than 12 hours in 5-miles-per-hour wind velocity, capable of burning in any air velocities from zero to 40 miles per hour, substantially constructed so as to withstand reasonable shocks without leaking, and shall be carried in a metal rack or box; each red electric lantern shall be capable of operating continuously for not less than 12 hours and shall be substantially constructed so as to withstand reasonable shocks without breakage.

(h) At least three red-burning fuses (if carrier elects to carry and use flares as warning signals); each fuse shall be

(TURN TO PAGE 94, PLEASE)



...and You're a Good Truck Finish!

Kem Transport Enamel formulations must get over these hurdles... and must be plenty good to do it! For test fences like these—with coated panels exposed at a 45° angle to sun, rain and snow—are as tough a trial as man and nature together can contrive.

Every finish that passes this exposure test—and the many other tests devised by Sherwin-Williams technicians—has proved its ability to stand up on your trucks. It must withstand blistering tropical sun and near-Arctic cold before it enters your spray-gun.

Another S-W development, available through our Color Meter Service,

is made possible by this test-fence set-up: the gauging of color fading. By careful checking of exposed panels, S-W experts can tell the direction of fade that any color will take. Thus a four-year-old blue can be matched perfectly for touching up damaged panels, fenders, etc.

So, if your trucks are subjected to hard service, refinish them with Kem. You'll agree that your actual operating conditions are nothing to a finish that endured far worse hazards in our laboratories before a pint was sold!

For full data and color cards on Kem Transport Enamels, write to the Sherwin-Williams Co., Cleveland, O.



SHERWIN-WILLIAMS
KEM TRANSPORT ENAMEL



BOTH Can "Take" the Punishment of Hot Jobs

Unyielding under the punishing heat of hot jobs ... that's the Edison HC (High Compression) Spark Plug. The only plug specially engineered to give top performance in today's "hotter running" engines.



SOLID, LEAK-PROOF GASKET

Only Edison Spark Plugs have the patented, spun-on, solid copper gasket, always perfectly centered. Assures 100% compression-tight fit, and never needs replacement.

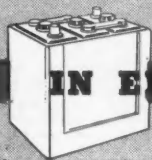
The Edison HC warms up faster and runs cooler... Delivers more power without motor "ping"... Assures a hotter spark at highest speeds... Burns the charge more completely, resulting in increased power and greater fuel economy... Gives premium performance with regular gas... Has longer life... And costs no more.

Edison HC's are made in all sizes and heat ranges for trucks and cars. Try a set in your hottest job. You'll be dollars ahead in economy and performance.

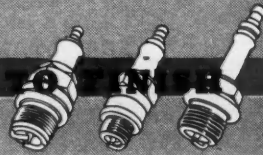
EDISON-SPLITDORF CORPORATION, West Orange, New Jersey

A DIVISION OF
Thomas A. Edison
INCORPORATED

Edison SPARK PLUGS



IN ELECTRICITY, IT'S Edison FROM START TO FINISH



ICC SAFETY REGULATIONS

(Continued from Page 92)

made in accordance with specifications of the Bureau of Explosives, 30 Vesey Street, New York, N. Y., and so marked, and shall be capable of burning at least 15 minutes.

NOTE.—Flares (pot torches), fusees, oil lanterns, or any signal produced by a flame, shall not be carried or used as warning signals for motor vehicles used in the transportation of inflammable liquids or inflammable compressed gases in cargo tanks; but in lieu of such flares and fusees, three red electric lanterns shall be carried. See Rule 2.232.

(i) At least two red cloth flags, not less than 12 inches square, with standards.

3.3492 On every bus there shall be—

(a) All items listed under Rule 3.3491 and in addition:

(b) One metal first-aid kit, heavy duty 10-unit type.†

(c) One hand ax.

PARTS AND ACCESSORIES REQUIRED ON NEW VEHICLES

[Acquired on and after Jan. 1, 1940]

3.4 ADDITIONAL EQUIPMENT RE-

QUIRED ON NEW VEHICLES.—Every new motor vehicle acquired by a motor carrier on and after Jan. 1, 1940,* shall in addition to the requirements hereinbefore set forth, be at all times equipped as follows:

3.41 LIGHTING DEVICES ON NEW VEHICLES.

3.411 ELECTRIC LAMPS.—All lamps required by these regulations to be securely and permanently affixed to any new motor vehicle shall be electric.

3.412 DUAL OR MULTIPLE BEAM HEAD LAMPS.—Head lamps on any new motor vehicle shall be of the dual or multiple beam type.

3.413 ADEQUATE WIRING AND CONNECTIONS.—Each piece of electrical equipment on any new motor vehicle, except high-tension ignition circuit, shall be connected to the source of its power with suitably insulated stranded wire of electrical conductivity not less than the equivalent of No. 16 B & S gage solid copper wire. This shall not be so construed as to prohibit the use of the frame or other metal parts of such motor vehicle as a return ground system. The wiring and all connections and contacts, except the starter circuit, shall in any event be such that, with all electrical devices on the motor vehicle, except the starter, in operation and the generator operating at its maximum output, the voltage drop to any lamp or other device shall not be excessive.

3.42 BRAKES ON NEW VEHICLES.

3.421 BRAKES REQUIRED ON ALL WHEELS.—Every new motor vehicle shall be equipped with brakes on all wheels, excepting any full trailer, semitrailer, or pole trailer of a gross weight not exceeding 3,000 pounds; provided, however, that the gross weight of any such full trailer or 4-wheel pole trailer without brakes shall not exceed 40 per cent of the gross weight of the towing vehicle, and that the gross weight of any such semitrailer or two-wheel pole trailer without brakes shall not exceed 40 per cent of the gross weight of the towing vehicle when connected to the semitrailer or two-wheel pole trailer. (See illustration on page 96.)

3.422 AUTOMATIC APPLICATION OF BRAKES UPON BREAKAWAY.—Every new full trailer, (TURN TO PAGE 96, PLEASE)

* Oct. 15, 1940 for Private Carriers.

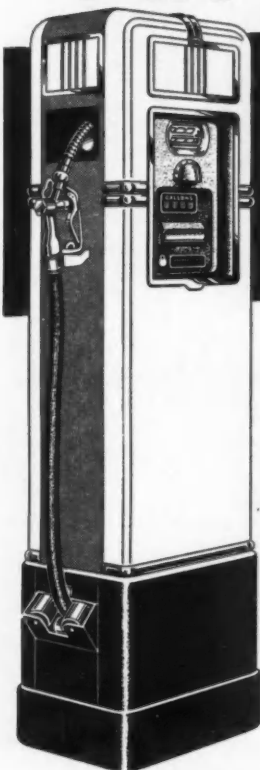
† Specification 269-A, June 8, 1938, Branch of Supply, Procurement Division, Treasury Department, Washington, D. C., Specification for Kits, First-Aid, illustrates the type of first-aid kit meeting the requisites of this rule. The requirements and contents of a 10-unit first-aid kit in the above specification, quoted in part, are as follows:

E-2b (1)—Class 1 (10-unit).—The case shall measure approximately 8 by 4½ by 2½ inches and shall be made of sheet steel not less than 0.037 inch in thickness. All seams and joints shall be welded. The cover shall be attached to the base by means of a continuous piano hinge, spot-welded in place. The case shall be so designed that the cover shall open to an angle of 90 to 100 degrees with the base, and at that point a substantial stop be provided; such stop shall in no manner interfere with the smooth operation of the cover.

E-2b (1) c—Contents.—Each case shall be provided with a contents label placed on the inside of the cover, giving brief instructions for first-aid treatment and arrangement of contents. The case shall contain the following: (See also paragraph E-3 for detailed specifications as to the content requirements.)

4-inch bandage compresses, 1 package. 2-inch bandage compresses, 1 package. 1-inch adhesive compresses, 2 packages. 40-inch triangular bandage, 1 package. Burn ointment, 1 package. Ammonia inhalants, 1 package. Iodine applicators, 1 package. Wire splint, 1 package. Tourniquet and forceps, 1 package.

PUT "SYSTEM" IN FUEL CHECKING and YOU'LL PUT DOLLARS IN YOUR POCKET!



...CHECK FUEL DELIVERIES WITH THE XACTO PRINTING PUMP THE PUMP ESPECIALLY BUILT FOR FLEET OPERATORS

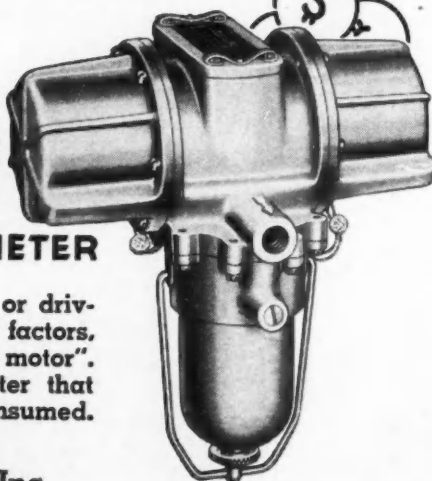
Here's a pump you can't fool! Installed in the garage or at refueling stops it prints a ticket that shows where every gallon goes. It simplifies record keeping—records every delivery—and protects profits!

CHECK MOTOR CONSUMPTION WITH AKRAFLO FUEL CONSUMPTION METER

To check the efficiency of fuels or drivers, vehicles, overhauls, or other factors, check fuel consumption "at the motor". It's easy with Akraflo—the meter that measures the fuel as it is consumed. Write for details.

S. F. BOWSER & CO., Inc.

1358 Creighton Ave.
FORT WAYNE, INDIANA



COMPLETE FUEL CHECKING SYSTEMS

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941



IS THERE A "JOKER" IN YOUR JACK BOX?

Don't put your drivers "on the spot" with jacks they can't depend on. After all, they're just as interested in maintaining schedules and preventing costly delays as you are. Keep their confidence by giving them dependable Blackhawks. The delay and trouble caused by one jack failure costs you more than the price of a trustworthy Blackhawk Hydraulic.

BLACKHAWKS ARE "SERVICE-PROVED"

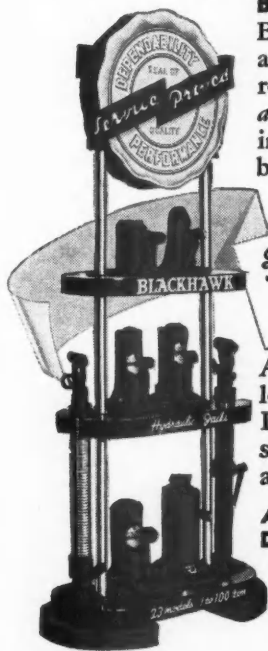
Blackhawk Jacks give you the size, sturdiness and power you need for quick service on the road. Their giant hydraulic power raises truck and load, thus preventing time loss of unloading and reloading. They are backed by an unbeatable record for keeping rolling stock rolling.

They are the *only* jacks to carry the "Service-Proved" Seal, your assurance of more-for-your-money value.

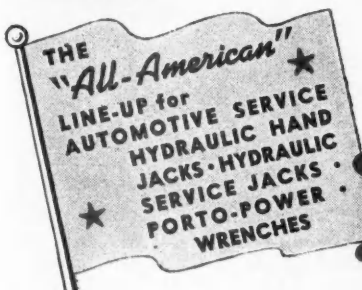
GET BLACKHAWK QUALITY

A jack at any price is worthless unless it gives you long service with SAFETY and DEPENDABILITY. Buy Blackhawks—and be safe! Your jobber salesman will help you select the proper models according to loads, tire sizes and axle heights.

A Product of **BLACKHAWK MFG. CO.**
Dept. J1141 MILWAUKEE, WISCONSIN

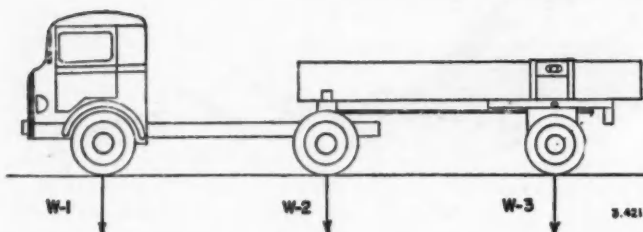


See this display of
"Service-Proved" Jacks
at your Blackhawk
Distributor.

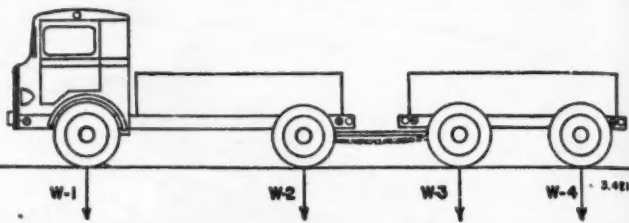


BLACKHAWK

(Diagrams to illustrate brake requirements for light trailers)



Semitrailer or 2-wheel pole trailer of 3,000 pounds gross weight or less must be equipped with brakes if W-3 is greater than 40 percent of the sum of W-1 and W-2



Full trailer or 4-wheel pole trailer of 3,000 pounds gross weight or less must be equipped with brakes if the sum of W-3 and W-4 is greater than 40 percent of the sum of W-1 and W-2

THIS HARDIE-KELLOGG JOB

REALLY SPEEDS UP PRODUCTION

IN THE WASH DEPARTMENT

Because it does a *faster* job of washing *better*, the Hardie-Kellogg washer is today's number one choice. Cost-conscious operators notice, too, that it saves on labor and that cleaning solutions go further. There's a size for every need.

CUSHIONED
AIR COMPRESSORS
CAR LIFTS
CAR WASHERS
PAINT SPRAY GUNS



ICC SAFETY REGULATIONS

(Continued from Page 94)

semitrailer, and pole trailer (except those weighing 3,000 pounds gross or less), shall be equipped with brakes of such a character as to be automatically applied upon break-away from the towing vehicle, and means shall be provided to maintain application of the brakes in such case for at least 15 minutes.

3.4 SAFETY GLASS ON NEW VEHICLES.

3.431 SAFETY GLASS IN CERTAIN SPECIFIED OPENINGS.—Whenever glass is used in the windshield and in the window next to the driver in a bus, truck or tractor; or in the doors and rear windows of a bus; or in the rear window of the driving compartment of a truck or tractor, it shall be safety glass which shall conform to the requirements contained in the "American Standard, Safety Code for Safety Glass for Glazing Motor Vehicles Operating on Land Highways, Z 26.1—1938," approved March 7, 1938, by the American Standards Association, 29 West 39th Street, New York, N. Y.

3.432 CASE-HARDENED GLASS PROHIBITED.—Case-hardened glass shall not be used in any windshield, door or window opening of any motor vehicle.

3.44 MISCELLANEOUS PARTS AND ACCESSORIES ON NEW VEHICLES.

3.441 SPEEDOMETER.—Every new bus, truck, and tractor shall be equipped with one speedometer or tachometer which shall be operative with reasonable accuracy.

For Part 1, See Page 176

For Part 5, See Page 184



Vying for top honors in the refuse disposal field is this 35 cu. yd. dumper recently delivered to a Chicago firm. The 20 ft. Heil Model H-11 body features a double-acting tail gate and twin-cylinder, straddle-mounted dumping unit. Chassis by Hendrickson.

780,000 MILES IN 1940

Without a Single Bearing Failure!



W. B. OSBORNE
Master Mechanic

Motor Parts and Grease
2-172

ALEMITE POWER LUBRICATION

Keeps Fleet Rolling for

Duke Power Company, Charlotte, N. C.

SAYS Duke's Master Mechanic, W. B. Osborne, "The Duke Power Company operates 60 buses and 20 trucks and passenger cars which covered a total of 780,000 miles in 1940. Our Alemite Barrel Pump took care of high pressure lubrication on all of them, and we didn't have a single bearing failure due to neglected lubrication!

"Incidentally, there's a considerable time saving over the lubrication method previously used, and that's worth while, too."

ALEMITE BARREL PUMPS FOR ANY SIZE FLEET

—All Have Exclusive New DYN-A-MATIC PRIMER!

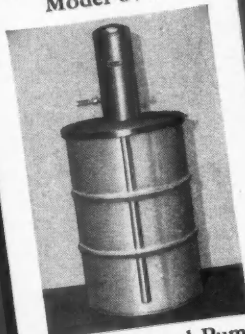
Whether you operate five units or five hundred, there's an Alemite Barrel Pump to fit your needs exactly! Large operators meet maximum demands with the 6700 series. Medium size fleets find the 7200 series adequate. And for the small operator, the 7300 series takes care of all requirements perfectly.

All of these Alemite Barrel Pumps operate direct from original drums, saving time and doing away with waste and contamination. All high pressure models are equipped with the exclusive new Alemite DYN-A-MATIC PRIMER which forces lubricant into pumping mechanism, insuring freedom from air pockets! That's why no other pumps can duplicate Alemite performance with heavy fibrous grease —at any temperature!

WRITE TODAY FOR COMPLETE INFORMATION!



Alemite Barrel Pump
Model 6701



Alemite Barrel Pump
Model 7295A



Alemite Barrel Pump
Model 7300

ALEMITE

REG. U. S. PAT. OFF.

Industrial LUBRICATION

ANOTHER STEWART-WARNER PRODUCT

1676 Diversey Parkway, Chicago, Illinois - Belleville, Ontario



Ask Anyone
in Industry!

CCJ QUIZ



10 points for each correct answer, you can consider yourself rather observant if you score 90 or more; 70 or 80 puts you in the "average" class; below 60 . . . you could be a little more observant, or maybe it's just that you need your glasses changed.

Correct answers on page 106.

Do you see—or do you just look? This test will give you the answer . . . because it's really more of a test on your keenness of observation rather than on any special or technical knowledge. Giving yourself

1.

The 1941 Chevrolet truck models have been on the road for half a year now. Have you taken time out to notice that the lines on the grille work were:

- a. Vertical. b. Horizontal.
- c. Part vertical and part horizontal.
- d. Diagonal.

2.

We know you've seen pictures of these automotive moguls dozens of times. Tell us which, if any, sports a mustache.

- a. Henry Ford. b. K. T. Keller.
- c. Wm. Knudsen. d. None of these three.

3.

Which of these rubber companies shows its trade-mark, a winged shoe, on every tire it manufactures?

- a. Goodyear. b. Goodrich. c. Firestone.
- d. United States. e. General.

4.

Maybe this one is too easy . . . but you'd be surprised how many folks have been caught on it. In the ordinary traffic signal combination of red, green, and amber, what is the usual arrangement going from top to bottom?

- a. Red, green, amber.
- b. Red, amber, green.
- c. Green, red, amber.
- d. Green, amber red.
- e. Amber, green, red.
- f. Amber, red, green.

5.

How often have you seen (or looked at) U. S. route markers? If you've really seen them, you'll know that their shape is that of:

- a. A circle. b. A square. c. An octagon.
- d. An escutcheon. e. A keystone.

6.

Supplementing the previous question, what additional information is given on U. S. route markers besides the mere route number?

- a. The name of the state.
- b. The compass direction—north, east, south, or west.
- c. The number of the intersecting highway being approached.
- d. There is no other information.

7.

Like the carved figures at the prow of old-time ships, you'll find at the front of Mack trucks the familiar figure of:

- a. A winged horse. b. An eagle.
- c. A gargoyle. d. A griffin. e. A bulldog.

8.

Maybe you've never driven a truck in this particular area and maybe you never intend to . . . but if you've ever looked at a U. S. map you should have no trouble with this one. In driving from South Dakota to Kansas what state must be crossed?

- a. Nebraska. b. Iowa. c. Missouri.
- d. North Dakota. e. Oklahoma.

9.

You know that the International Harvester trade-mark and identification plate is some sort of a diamond affair. Be a little more specific. How many diamonds are there?

- a. One. b. Two. c. Three. d. Four. e. Five.

10.

Here's the last question, and it's a real indication of just how observant you are. Now, don't you dare peek . . . tell us what is the dominant color on the front cover of this issue of COMMERCIAL CAR JOURNAL.

- a. Red. b. Green. c. Yellow d. Blue.
- e. Orange.

**DUAL HIGHWAYS
MAKE FOR . . .
GREATER SAFETY**

**BUT..
IT STILL TAKES
BRAKES TO STOP**

The quicker and surer your trucks can stop, the faster they can safely travel the highways. Ferodo Brake Blocks, supplied $\frac{3}{8}$ " and up in thickness, insure the smooth, certain braking action that helps make fast haulage and delivery schedules safe. Molded of a special friction compound under enormous hydraulic pressure, they will not fade, and their longer life cuts brake maintenance cost to the bone. Write for full details.

Ferodo for Road Safety

**FERODO
BRAKE LININGS**

FERODO AND ASBESTOS, INCORPORATED, NEW BRUNSWICK, N. J.



PLAN NO!

**KLAUER
MANUFACTURING CO.**

DUBUQUE, IOWA

Highway Officials:

Have you checked into Snogo recently? Do you know about the wide range of Snogo models and prices? There is a size for every budget, from 1½ tons to the largest four wheel drive type of truck. There is no excuse today for not having Snogo protection!

TROUBLE SHOOTING GUIDE



This tabulation analyzes all the factors in three main engine troubles—knocks, excessive oil consumption, overheating—and also deals with Road starting. No remedies of troubles are offered because in principle the remedy is obvious and in practice it is varied owing to circumstances and conditions.

The trouble shooter can use this material as a guide or as a reminder to prevent his overlooking any factors causing trouble or affecting the source of trouble. A combination of several minor conditions may be more puzzling and harder to find than one major one.

ENGINE KNOCK

A—CONNECTING RODS

- A1. Loose connecting rod bearing.
- A2. Loose piston pins or worn piston pin bushings
- A3. Connecting rods bent or twisted

B—PISTONS

- B1. Piston slap, worn pistons or cylinders, tight piston pins

- B2. Rattle when piston rings are broken or loose in grooves
- B3. New piston rings in worn cylinder striking shoulder
- B4. Loose piston struts

C—CYLINDERS

- C1. Carbon knock
- C2. Fuel knock or detonation
- C3. Ignition timed too early or sticking automatic spark advance
- C4. Cylinder not at right angle to crankshaft
- C5. Wrong cylinder head gasket
- C6. Loose cylinder block

D—CRANKSHAFT

- D1. Loose main bearings
- D2. End-play in crankshaft
- D3. Loose flywheel, counterweights, vibration dampener or timing gear
- D4. Bent or sprung crankshaft

E—CAMSHAFT DRIVE

- E1. Improperly adjusted timing chain
- E2. Worn timing gears
- E3. Main bearings adjusted so tightly that timing gears engage in too close mesh

- E4. Metal chip wedged between teeth of timing gear
- E5. Timing gear loose on shaft
- E6. Off center gears

F—VALVE ACTION

- F1. Too much clearance between valve and tappet
- F2. Worn valve lifter rollers, pins, or mushrooms
- F3. Worn valve lifter or guide
- F4. Worn valve stem guides
- F5. Worn rocker armshafts or bushings
- F6. Loose rocker armshaft bracket
- F7. Flat spot on rocker arm
- F8. Broken or weak valve springs

G—CAMSHAFT GROUP

- G1. Worn camshaft bearings
- G2. End-play in camshaft
- G3. Flat spot on the heel of a cam

H—ENGINE GENERAL

- H1. Loose engine support bolts
- H2. Engine support brackets loose in frame
- H3. Worn bushings on accessory shaft
- H4. Too much pressure or air lock on plunger type oil pumps
- H5. Loose or worn magneto, pump, or generator couplings
- H6. Broken spring in fuel pump

EXCESSIVE OIL CONSUMPTION

A—OIL PUMPING

- A1. Insufficient ring tension
- A2. Insufficient clearance at ring gap

Grey-Rock makes this FREE OFFER

This large printed wall plaque containing the full N. S. C. schedule is free from your Grey-Rock jobber. Or write us for a copy.

NATIONAL SAFETY COUNCIL'S STANDARD SCHEDULE FOR SERVICING FLEET BRAKES

This, the first definite standard of procedure ever issued for brake service, should guide the mechanic's workmanship provide an accepted definition of complete brake service, and protect the fleet owner's investment.

By having competent mechanics follow it in your shop you will protect drivers from brake failure in emergency, and avoid gradual development of dangerous brake conditions. Regular inspection is a vital part of this schedule.

NR 504222

1. Inspect and adjust

- a. Inspect and adjust hand brake
- b. Inspect and adjust foot brake
- c. Inspect and adjust parking brake
- d. Inspect and adjust emergency brake
- e. Inspect and adjust master cylinder
- f. Inspect and adjust wheel cylinders
- g. Inspect and adjust brake shoes
- h. Inspect and adjust brake pads
- i. Inspect and adjust brake drums
- j. Inspect and adjust brake rotors
- k. Inspect and adjust brake calipers
- l. Inspect and adjust brake lines
- m. Inspect and adjust brake hoses
- n. Inspect and adjust brake master cylinder
- o. Inspect and adjust brake wheel cylinders
- p. Inspect and adjust brake shoe adjusters
- q. Inspect and adjust brake pad adjusters
- r. Inspect and adjust brake drum adjusters
- s. Inspect and adjust brake rotor adjusters
- t. Inspect and adjust brake caliper adjusters
- u. Inspect and adjust brake line adjusters
- v. Inspect and adjust brake hose adjusters
- w. Inspect and adjust brake master cylinder adjusters
- x. Inspect and adjust brake wheel cylinder adjusters
- y. Inspect and adjust brake shoe adjusters
- z. Inspect and adjust brake pad adjusters

2. Lubricate

- a. Lubricate master cylinder
- b. Lubricate wheel cylinders
- c. Lubricate brake shoes
- d. Lubricate brake pads
- e. Lubricate brake drums
- f. Lubricate brake rotors
- g. Lubricate brake calipers
- h. Lubricate brake lines
- i. Lubricate brake hoses
- j. Lubricate brake master cylinder
- k. Lubricate brake wheel cylinders
- l. Lubricate brake shoe adjusters
- m. Lubricate brake pad adjusters
- n. Lubricate brake drum adjusters
- o. Lubricate brake rotor adjusters
- p. Lubricate brake caliper adjusters
- q. Lubricate brake line adjusters
- r. Lubricate brake hose adjusters
- s. Lubricate brake master cylinder adjusters
- t. Lubricate brake wheel cylinder adjusters
- u. Lubricate brake shoe adjusters
- v. Lubricate brake pad adjusters
- w. Lubricate brake drum adjusters
- x. Lubricate brake rotor adjusters
- y. Lubricate brake caliper adjusters
- z. Lubricate brake line adjusters

3. Adjust

- a. Adjust master cylinder
- b. Adjust wheel cylinders
- c. Adjust brake shoes
- d. Adjust brake pads
- e. Adjust brake drums
- f. Adjust brake rotors
- g. Adjust brake calipers
- h. Adjust brake lines
- i. Adjust brake hoses
- j. Adjust brake master cylinder
- k. Adjust brake wheel cylinders
- l. Adjust brake shoe adjusters
- m. Adjust brake pad adjusters
- n. Adjust brake drum adjusters
- o. Adjust brake rotor adjusters
- p. Adjust brake caliper adjusters
- q. Adjust brake line adjusters
- r. Adjust brake hose adjusters
- s. Adjust brake master cylinder adjusters
- t. Adjust brake wheel cylinder adjusters
- u. Adjust brake shoe adjusters
- v. Adjust brake pad adjusters
- w. Adjust brake drum adjusters
- x. Adjust brake rotor adjusters
- y. Adjust brake caliper adjusters
- z. Adjust brake line adjusters

4. Test

- a. Test master cylinder
- b. Test wheel cylinders
- c. Test brake shoes
- d. Test brake pads
- e. Test brake drums
- f. Test brake rotors
- g. Test brake calipers
- h. Test brake lines
- i. Test brake hoses
- j. Test brake master cylinder
- k. Test brake wheel cylinders
- l. Test brake shoe adjusters
- m. Test brake pad adjusters
- n. Test brake drum adjusters
- o. Test brake rotor adjusters
- p. Test brake caliper adjusters
- q. Test brake line adjusters
- r. Test brake hose adjusters
- s. Test brake master cylinder adjusters
- t. Test brake wheel cylinder adjusters
- u. Test brake shoe adjusters
- v. Test brake pad adjusters
- w. Test brake drum adjusters
- x. Test brake rotor adjusters
- y. Test brake caliper adjusters
- z. Test brake line adjusters

The First STANDARD Brake Servicing Schedule

Here, for the first time in history, is a definite and standard schedule for brake servicing. It guides the mechanic. It sets up an accepted definition of complete brake service. It protects fleet owners' investments.

Fleet operators: Be sure of getting full efficiency from your brakes in both performance and economy. Have your mechanics adhere to this definite, correct procedure in brake maintenance, and to the Grey-Rock Engineering Methods published with them—a complete system offered only by Grey-Rock.

- A3. Rings too loose or too tight in grooves
- A4. Uneven ring pressure against cylinder wall
- A5. Warped or twisted rings
- A6. Too much clearance behind compression ring
- A7. Too little clearance behind oil ring
- A8. Out of round and tapered cylinders
- A9. Cylinders not at right angles to the crankshaft
- A10. Worn pistons and cylinder walls
- A11. Misaligned connecting rods
- A12. Loose and elliptical shaped engine bearings
- A13. Mismatched bearing halves
- A14. Too much clearance between valve stems and guides
- A15. Excessive oil pressure
- A16. Thin or diluted oil
- A17. Defective fuel pump

B—OIL LEAKS

- B1. Oil pan
- B2. Rear main bearing
- B3. Front main bearing
- B4. Oil pump
- B5. Rear camshaft bearing
- B6. Timing case cover
- B7. Valve tappet cover
- B8. Rocker arm cover
- B9. Accessory shaft opening in timing case

OVERHEATING

A—RADIATOR

- A1. Insufficient supply of water
- A2. Obstructed air flow
- A3. Radiator core covered with heavy paint
- A4. Fins or air passages stopped up with mud or insects

- A5. Tubes or passages pinched, bent or dented
- A6. Shutter not opening fully
- A7. Anti-freeze not removed
- A8. Bent or loose baffle plate
- A9. Leak in overflow pipe
- A10. Pinched overflow pipe
- A11. Inside of tubes or passages clogged with sediment, etc.
- A12. Thermostat not functioning properly
- A13. Incorrect radiator core

B—FAN

- B1. Slipping fan belt
- B2. Fan pulley worn too smooth or wide in groove
- B3. Fan bearings tight, dry, or defective
- B4. Fan blades too flat

C—WATER HOSE

- C1. Hose old or thin causing collapse from pump suction
- C2. Rotted internally permitting lining to impede circulation

D—WATER PUMP

- D1. Loose impeller
- D2. Excess wear between impeller and housing
- D3. Worn pump shaft or packing

E—WATER JACKET

- E1. Core not completely removed from casting
- E2. Circulating holes partially stopped up
- E3. Insulated with rust, etc., or stopped up with hose fragments
- E4. Improper cylinder head gasket

F—ENGINE

- F1. Engine tight, new or overhauled
- F2. Oil pump not circulating efficiently
- F3. Oil too thin or diluted, or too heavy
- F4. Improper valve timing
- F5. Valves not properly seated
- F6. Pistons and rings not properly fitted
- F7. Excessive piston ring wall pressure
- F8. Scored cylinder walls
- F9. Insufficient clearance at ring ends

G—CARBURETOR AND MANIFOLDS

- G1. Mixture too rich or too lean
- G2. Air leaks in manifold
- G3. Improper regulation of heat control

H—IGNITION

- H1. Improperly timed ignition or sticking spark advance

HARD STARTING

A—IGNITION

- A1. Low battery
- A2. Improperly spaced or dirty spark plugs
- A3. Improperly spaced or dirty points
- A4. Weak coil
- A5. Weak condenser
- A6. Defective starting motor
- A7. Too heavy oil
- A8. Poor insulation on high tension wires

B—FUEL SYSTEM

- B1. Vapor lock
- B2. Improper carburetor adjustment
- B3. Improper automatic choke adjustment
- B4. Defective fuel pump

ER to Fleet Operators

The Finest Engineering Methods

THIS 72-PAGE BOOK contains the full National Safety Council schedule—and the latest Servicing Methods of Grey-Rock Engineers, page after page of technical service information with diagrams, covering all phases of brake maintenance. Work to this combination of the National Safety Council Standard schedule and these Grey-Rock Technical Methods. You will be assured of efficient, safe brake operation.

Your Grey-Rock Jobber has a free copy of this book for you.

The Finest Products

Your Grey-Rock jobber, specifying on an engineered plan, offers factory-selected combinations of the industry's finest blocks, for every vehicle you operate. He also supplies Grey-Rock Vee-Lok clutch facings for extra-long wear and extra-smooth engagement.



Grey-Rock

BALANCED TRUCK BLOCKS

UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.
BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • AUTOMOTIVE HOSE • RELINING EQUIPMENT



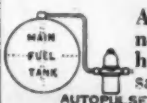
One of eight outside-frame Trailmobile trailers recently purchased by the Wilson Freight Forwarding Co. of Cincinnati. The completely-enclosed body is 26 ft. long, tires are 10.00/20 and total trailer weight is 5900 lb.

LAID UP ON THE ROAD AND THE BO\$\$ BLAMES ME!



PUMPS \$ DIFFER

Camshaft pumps *must* mount on hot motor and *must* pump by suction, and jobs "lay up" to cool off the hot pump.

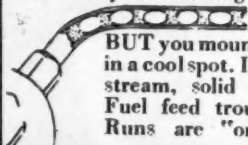


AUTOPULSE mounts back near gas tank, never gets hot, never heats fuel, and saves money every mile run.



BANISH VAPOR LOCK

Engine-mounted pumps get hot. This and suction-pumping cause vapor lock and it is vapor lock that K. O.'s your running schedules.

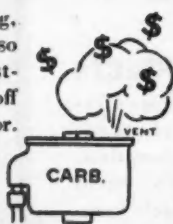


BUT you mount AUTOPULSE in a cool spot. It *pushes* the fuel stream, solid and vapor-free. Fuel feed troubles disappear. Runs are "on time" again.

\$AVE\$ FUEL WA\$TE

Besides vapor-locking, hot camshaft pumps also cause 10% of highest-test fuel-ends to boil off and vent out carburetor.

One tenth your fuel bill total waste. Stop this with Autopulse.



\$AVING\$ - \$AVING\$

Stop waste today! Why let LO\$\$ continue? Get rid of trouble. Many A-1 operators have done so with AUTOPULSE. Have your jobber tell you of our change-over plan, or write direct.

CUT OUT AND MAIL THE COUPON TODAY!

AUTOPULSE CORPORATION, Detroit, Mich.

Please send complete information about AUTOPULSE PUMPS

Name _____ Street _____
City _____ State _____

FREE BOOKS



... a special selection made by the editors ... to get your copy, just check the letter on the post card between pages 204 and 205 which corresponds with the item you desire and mail to Commercial Car Journal, Philadelphia.

"Tools of Progress"

The new Duro Metal Products Co. catalog, "Tools of Progress," features illustrations of tools that really give the mechanic a true picture of what the tool looks like. There are 136 pages of information and illustrations of automotive tools including wrenches, sockets and special tools, singly and in sets. Check "A" on the postcard.

"Here Today"

The Travelers Insurance Co. has done its usual bang-up job on its annual booklet which gives facts and a comprehensive analysis of these facts on highway accidents. This one, which is the eleventh of the series, is titled "Here Today" Special features this year include editorials on speed, pedestrian accidents and the need for greater courtesy on the highway. Check "B" on the post card.

Sealed Power Manual

A fourth edition has brought the Sealed Power Oil and Gasoline Economy Manual up to date. There is much worthwhile information, amply illustrated, on causes of oil pumping and the proper cures. Over 120,000 copies of previous editions have been distributed, many of them to be used as a text book in automotive courses. 30-pages in all. Check "C" on the post card.

Ted Nagle Equipment Catalog

A great deal of useful information has been included in the Ted Nagle Equipment Corp. catalog. The information is a valuable reference for the trouble shooter and tune-up mechanic. Included also are descriptions of the various pieces of shop equipment made by the Company. Check "D" on the post card.

Wayne Pump Booklet

The Wayne Pump Co., Fort Wayne, Ind., has published a Rotogravure Booklet which features the Golden Anniversary pump Model 100. This attractive piece which in addition to describing the new pump, tells about the company and the men who run it. Copies of the booklet will be sent to any fleet operator. Check "E" on post card.

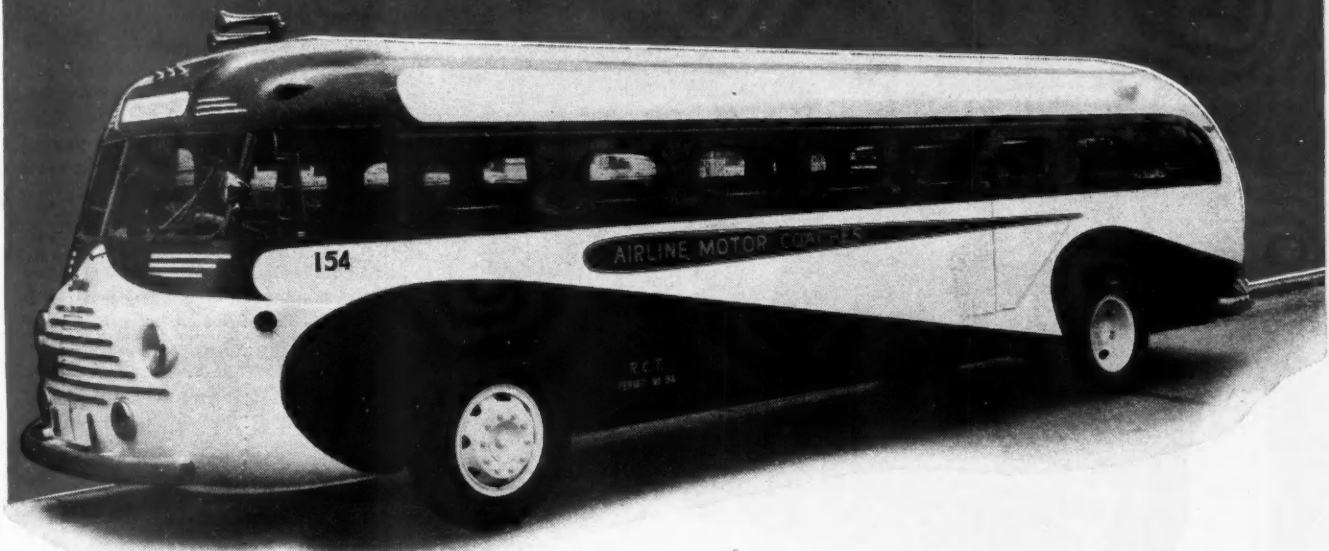
QUIZ ANSWERS

(See page 98)

1. c. 2. c. 3. a. 4. b. 5. d.
6. a. 7. e. 8. a. 9. c. 10. b.

DITZLER

LIKE WE BUY TIRES!"



So says Mr. Thomas Spinks of the Airline Motor Coach Lines, Henderson, Texas.

By that, Mr. Spinks means that they buy Ditzco Enamels, Primer Surfaceers, Thinners, etc., on a *performance basis*—and his company's experience, on 83 coaches, has proven to him that Ditzler materials do *out-perform!*

"In depth of color and gloss retention", says Mr. Spinks, "Ditzco Enamels are superior to any other finishes we have ever used. Our equipment is

better looking than ever before!"

Airline Motor Coach Lines are just one of many leading coach line operators who prefer Ditzler materials.

There is a Ditzler distributor near you, who will be glad to tell you more about the new, 1941 Ditzler Fleet Service Plan and how you can use it to keep better looking equipment on the road at less cost.

If you do not know the name of your nearest Ditzler distributor, write us direct.

DITZLER COLOR COMPANY • DETROIT, MICH.

MAINTENANCE PROCEDURE FOR HAND FIRE EXTINGUISHERS

Compiled by Safety Research Institute, New York

FIRE extinguishers, to be instantly available for use at all times, must be properly recharged and inspected. The date of recharging should be noted on the tag provided for that purpose, along with the name or initials of the man doing the work. Full instructions for recharging the various types of extinguishers are given on the labels and they should be followed to the letter.

When the 2½-gal. units are recharged, all parts should be washed thoroughly in water and the water drained through the

hose. The shell should be examined to make certain it is sound at the seams, for, after all, it is a pressure container. The head gasket and hose should be examined for signs of deterioration, and the strainer should be cleaned.

When the cap is screwed back on the shell, the worker should make certain that at least four threads are engaged. A small amount of vaseline may be placed in the threads to make the task easier and facilitate removal for the next recharging.

All chemical solutions should be mixed

in clean containers and not in the shell of the extinguisher, and the container should be carefully rinsed before being used for a new solution.

Only liquid obtained from the manufacturer should be used in the vaporizing liquid type extinguisher. The use of commercial carbon tetrachloride, which may contain some water or chemical impurities, is likely to damage the interior of the extinguisher or, if used on live electrical equipment, endanger the operator.

Directions of Inspecting and Recharging Extinguishers.

SODA-ACID: recharge annually. If exposed to temperatures below 40 deg. F., place in suitably heated cabinets. Do not mix anti-freeze crystals with the solution.

FOAM: recharge annually. Anti-freeze ingredients should not be added to the solution and if exposed to temperatures below 40 deg., extinguishers of this type should be kept in suitably heated cabinets.

VAPORIZING LIQUID: recharge after use and keep unit filled at all times. Test action of pump by discharging a portion of the liquid into a clean, dry container. The test liquid can be poured back through the filler opening. Guard against overfilling. No lubricants should be used on the piston of this type of extinguisher, nor should any water be placed in it.

LOADED STREAM: recharge after use; inspect annually to see if container is filled and that hose and gasket are in good condition. Weigh carbon dioxide cylinder and replace it if it has lost one-half ounce. Extinguishers of this type may be exposed to temperatures as low as 40 deg. below zero F.

CARBON DIOXIDE: recharge after use; inspect annually to note if seal is intact. Weigh the unit to make certain weight is equal to that stamped on it. Loss of 10% in weight indicates the need for recharging.

ANTI-FREEZE, PUMP TANK: recharge after use; inspect annually to make certain it is filled to filling mark. Test pump action by operating pump for several strokes, directing the stream back into the tank.

ANTI-FREEZE, OTHER TYPES: recharge after use; inspect annually to see if container is filled and that hose, gasket, etc., are in good condition. If carbon dioxide is used for pressure, loss of one-half ounce in the weight of the cylinder is cause for replacing it with a new one.

N. Y. Safety Convention

"Safety—Defense—Liberty" is the theme billed for the Twelfth Annual Safety Convention sponsored by the Greater New York Safety Convention, to be held April 22 to 25. The program will emphasize the close relationship between accident prevention and defense preparations.

HIRE THIS Master Mechanic WITH A WORLD OF EXPERIENCE



SET NO.
55

We cannot recommend too highly this worker that takes every car, bus or truck in its stride. Such effortless efficiency can come only from long experience; such speed, from keeping abreast of the times in design. Well-liked by master mechanics because it's in their class. Popular with all because it shows the way to better work. "55" has the inbred quality for loyal, lifetime service, an enviable record in hundreds of the best shops in the country. You will like the way it saves time and money while working for a most reasonable wage. . . . Better sign it on!

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"SUPERSOCKETS"

J. H. WILLIAMS & CO.
"The Wrench People"
225 Lafayette Street
New York, N. Y.
Western Warehouse and
Sales Office: Chicago
Works: Buffalo



FOURTEEN "VETERAN" TRUCKS are giving 12% to 30% longer mileage between overhauls since the Van Doren Laundry Service, Inc., called in a Socony-Vacuum fleet engineer.

Just look at what W. M. Van Doren says:

"A trial with Sovac Truck-Bus Oil in our fleet reduced sludge formation...held wear to a minimum," Mr. Van Doren writes from his office in Westfield, New Jersey.

"That was five years ago," he explains. "Since then, your oil and engineering service have helped us keep operating costs at rock bottom.

"Our service manager, Edward B. Vroom, is very enthusiastic about our results with Sovac."

SERVICE FOR YOUR FLEET!

1 YOUR PROBLEM IS ANSWERED! Nothing is taken for granted, no step is overlooked. Socony-Vacuum's fleet engineer analyzes your fleet by makes and models, for type of service, loads carried, operating temperatures, engine condition, maintenance methods. He then helps your men carry out money-saving operating and maintenance improvements.

2 LUBRICANTS TO FIT! Socony-Vacuum's engineers are not guided by guesswork. They base recommendations on scientific tests—select products for your equipment from Sovac Truck-Bus Oils, Delvac 500 Series Oils, Mobilubes, and Mobilgreases.

3 75 YEARS' EXPERIENCE! And every Socony-Vacuum fleet engineer has been trained to apply this experience—greatest in the oil business—to help you hold maintenance and operating costs to a minimum.

4 NATION-WIDE SERVICE! Across the U. S. A., you will find our fleet engineers available to recommend lubricants to meet *all* conditions on your routes. SOCONY-VACUUM OIL CO., INC., and Affiliates: Magnolia Petroleum Co., General Petroleum Corporation of California.

Address Truck-Bus Division
Socony-Vacuum Oil Co., Inc.
26 Broadway, New York City



Fleet Engineer

NEW PRODUCTS

(CONTINUED FROM PAGE 119)

New Wet-Grinding Kit

A wet-grinding attachment in the form of a kit, designed for operation on valve stems and rocker arms, is available from the Van Dorn Portable Electric Tool Co., Towson, Md. The kit may be used with all Van Dorn wet-grinding valve resurfacers. It improves the grinding finish on valve stems and rocker arms without burning or distorting them.

Improved Metalizing Gun

A new metalizing gun which can spray carbon steel, stainless steel, bronze brass, monel metal, nickel, aluminum, zinc and other metals available in wire form, has been introduced by the Metalizing Engineering Co., Inc., 2107 Forty-first Ave., Long Island City, N. Y. It is particularly adaptable for building up worn crankshafts, throw bearings, water pump impeller spindles, armature shafts, and other parts, as well as for repairing cracked cylinder blocks.

A "controlled power unit" provides automatic adjustment of wire feed regardless



of fuel used which may include acetylene, propane, hydrogen, natural gas or manufactured gas. Improved spraying characteristics are also claimed for the new model which is known as the Type 2E Metco Metalizing Gun.



You're off to a good start
with a new customer
when you've sold him

Genuine Bendix Drive Renewal Parts

NOBODY knows better than you do what hard work it is to get new customers. Isn't that so? And, since new customers cost so much money and effort to get, isn't it simply good judgment to do everything possible to please them, and to bring them back for future work? That's the way sales-momentum builds up!

Take starter-drive repair and renewal parts, for instance. When genuine, time

proved Bendix Drive parts and renewal units are so easy to get, so convenient, so thoroughly reliable and sure to satisfy, why take chances with unknown parts made by others whose only interest is perhaps one of dollars and cents?

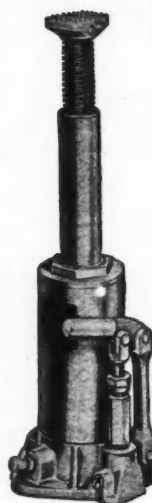
You'll make more money in the end, and safeguard your hard-won good will among the trade and the motoring public, by always using genuine Bendix Drives and parts for service work.

ECLIPSE MACHINE DIVISION
BENDIX AVIATION CORPORATION
ELMIRA, NEW YORK

BENDIX DRIVE

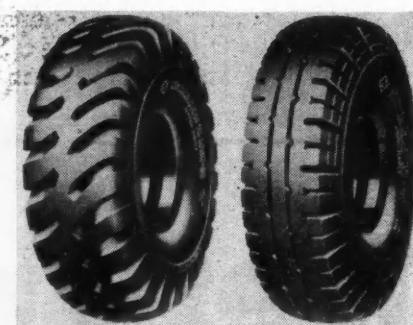
New Blackhawk Jacks

Two new hydraulic hand jacks have been added to the line manufactured by the Blackhawk Mfg. Co., Milwaukee, Wis. The new M-7.3, with a capacity of 5 tons, has a low height of 7 5/16 in. and a total height of 14 1/2 in., provided by a telescopic double lift. The DE-11 has a collapsed height of 11 in., a 6 1/2-in. lift and a 3 1/2-in. screw extension, giving a total extended height of 21 in., sufficient to handle any high axle job. It has a full 12-ton capacity.



Tires Added to Seiberling Line

Two specially designed commercial tires have been added to the line manufactured



by the Seiberling Rubber Co., Akron, Ohio. The H.T. type features a flatter tread and a closer tread pattern, offering more rub-

(TURN TO PAGE 124, PLEASE)

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

Specify THE CRANKSHAFTS THAT
GO 241,631 MILES AND
SHOW ONLY .0004" WEAR!

5 TO 10 TIMES LONGER LIFE

● Illustrated is one of thousands of TOCCO-hardened crankshafts that are saving operators of gasoline and Diesel engines hundreds of dollars in maintenance costs. The enduring characteristics of the TOCCO Process of surface hardening enable crankshafts to pile up performance records of over 200,000 miles with hardly enough wear for the average shop to measure. Five to ten times more useful life is commonplace.

With defense deliveries demanding full speed ahead, it will pay you to specify TOCCO-hardened shafts in

your new trucks or buses. They'll cut down lay-up time by eliminating complete motor overhauls just to fix an "out-of-round" crankshaft. That's one reason why Autocar, Cummins, Hercules, General Motors Truck & Coach, White, and other leading engine makers use TOCCO-hardened shafts. These manufacturers know that TOCCO hardening insures their customers extra miles by the thousands.

Specify TOCCO-hardened crankshafts.

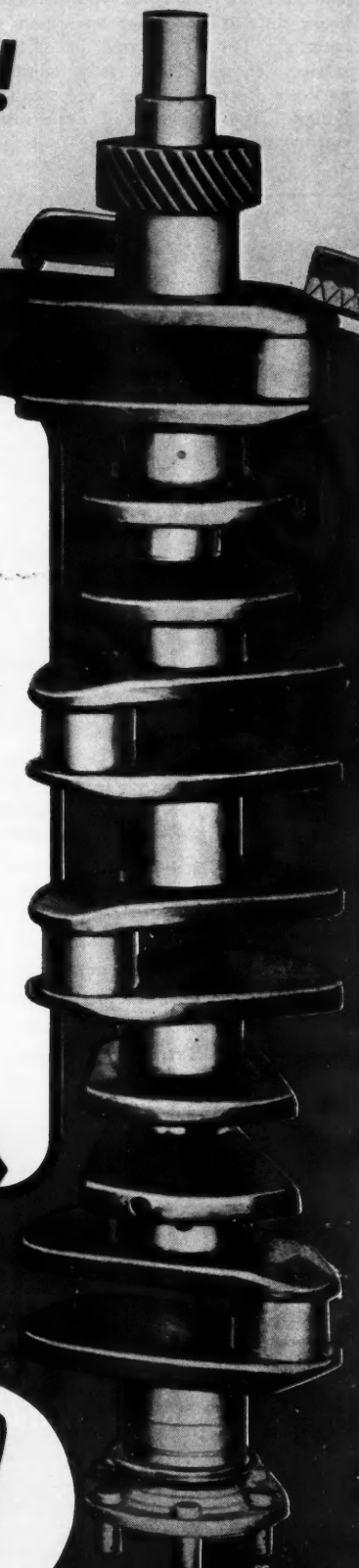
Photograph of TOCCO-hardened crankshaft after 241,631 desert miles in a well-known make of truck. Crankpin showed only .0004" wear. This is typical of TOCCO'S resistance to high speed, heavy loads and long miles.

THE
OHIO CRANKSHAFT
COMPANY

Cleveland • Ohio

TOCCO

"Why Heat Treat the Whole Piece?"



NEW PRODUCTS

(CONTINUED FROM PAGE 122)

ber in contact with the road. Shoulder grooves are unusually deep. Beads, of dual construction, incorporate woven piano wire. The T.L., a traction lug type tire built for heavy duty is suited for use where maximum traction is required in off-the-road service. Tread design is a compromise between the conventional "snow and mud" design. The carcasses of both tires are constructed of Saf-flex cord.

Fluorescent Units by Aray

Two portable fluorescent lighting units designed for use in the shop have been announced by the Aray Mfg. & Supply Co., 3107-3109 Pine St., St. Louis, Mo. Model A 61 is equipped with two 15 watt fluorescent lamps mounted in a baked red wrinkle casting. A baked white, removable reflector is said to reduce glare and shadows, while the unbreakable lens is said to be impervious to water, oil and greases. The unit is mounted on steel casters and is provided with a tool compartment. Model A 80, equipped with a single 15 watt lamp, has two adjustable



hooks for suspending unit over work. Both lamps are complete with a 20 ft. rubber cord and plug.

Fowler Lettering Screen

The H. B. Fowler Co., Wayne, Pa., is making silk screens for direct printing on trucks. The printing is done by simply applying a paste-like paint over the silk screen which any painter can do. If for any reason the legend must go on a concave surface or is too large for direct



printing a silk screen can be obtained for making your own decalcomanias. The screen lasts indefinitely in fleet operators' shops.

Several colors can be had by using more than one screen and various types of lettering paint are available. To get a quotation for a screen it is necessary to furnish a copy of your decalcomania or complete specifications of your lettering and emblem.

Anthony Rubber Insets

Restraining chains and springs are now being replaced with special rubber insets, in the new Anthony low-mounted hydraulic-hoist dump-bodies and super-hoist models. Developed by the Anthony Co., Streator, Ill., they prevent both "over-run" and "kick back" (the inherent tendency of a dump body to rear over backwards) when dumping a load or spreading gravel.

(TURN TO PAGE 126, PLEASE)

Here's a great new truck tire The PENNSYLVANIA Turnpike



"MY COST FIGURES
PROVE THAT YOU DO SAVE
MONEY WITH PENNSYLVANIA
TRUCK TIRES"

● Truly the truck tire of tomorrow . . . here today! A superb performer under all conditions. Exclusive non-skid Dual Purpose Tread is heat and wear resistant. Extra-tough carcass made 30% stronger through use of Supertest Cord. Both welded together by Super-Pressure Curing to make this great, new Turnpike the envy of the industry.

A test will prove the difference.

PENNSYLVANIA RUBBER COMPANY
General Offices & Factory: Jeannette, Penna.



A heavy ground-gripping non-skid tread—a carcass that eats up miles and a value in dollars and cents that challenges comparison!



Special
Tread
Resists
Wear

Patented—
U. S. Patent
Nos. 2218751
and 2238072

Under
Tread
Controls
Heat



**DON'T DRIVE
IN THE
RED
WITH**

"RIPE TOMATO ACCELERATION"

NOTHING can ruin schedules so quickly as a unit that has no *power*. That's ripe tomato acceleration—and it costs more than delayed schedules. It costs you real money . . . in wasted oil and in wasted gasoline. There's only one complete answer to ripe tomato acceleration. That is a set of American Hammered Piston Rings. It's the one line with the right ring set-up for each engine condition and the one-and-only POWER ring in the second groove.

*There is a special
COMMERCIAL
ENGINE SET
for every popular
bus and truck*



FOR INCREASED POWER . . . DECREASED OIL CONSUMPTION . . . IMPROVED MILEAGE, USE

American Hammered Piston Rings

a

K O P P E R S

product

POWER

NEW PRODUCTS

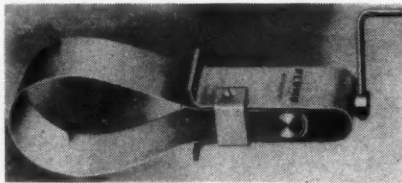
(CONTINUED FROM PAGE 124)

Plastics to Bat for Aluminum

In order to cope with the shortage of aluminum for commercial uses, a new line of plastic products in similar shapes and sizes as supplied in aluminum has been announced by the R. D. Werner Co., Inc., 380 Second Ave., New York, N. Y. Available in a wide range of colors, the new line includes rods and tubes, both flexible and rigid.

Plomb Ring Compressor

A piston ring compressor which is said to operate with speed and efficiency on all



types of engines has been put on the market by the Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles, Calif. Direct pressure is exerted on the rings by means of a

steel band and a crank arrangement. The new tool is available in three sizes: small, for all passenger cars; medium, for buses and trucks; large, for Diesels and large industrial units.

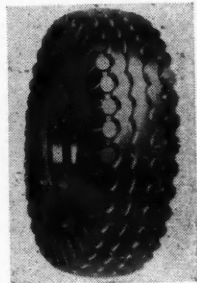
"Lightning" Analyzer

A new electrical trouble shooter, said to check all electrical parts on a car in 15 minutes, has been announced by the Electro Products Co., 621 E. 216th St., New York, N. Y. The unit features a Micro-Sensitive Leak Detector which is claimed to be so sensitive that it will detect current carried through a match flame. The high frequency circuit indicates where leakage occurs. Built in a heavy steel case and finished in crystalline black with an etched aluminum panel, the analyzer is furnished complete with all necessary leads and instructions.



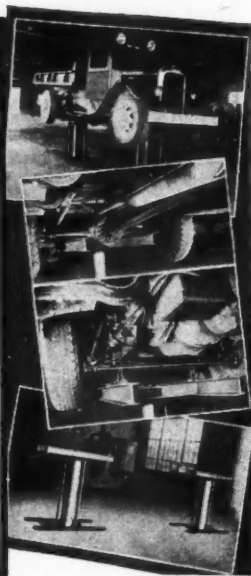
U. S. Tire Additions

A new Gillette Super Ribbed tire of rayon construction heads the line of passenger car, truck and bus tires offered by the United States Rubber Co., Rockefeller Center, New York, N. Y. Designed for truck and bus use, the tire features an impact-resisting cord body and special construction to radiate heat on high speed, long haul operations. Combination ribbed and stud tread design is used. Included in the truck and bus line are the new Gillette Bear, a heavy service type, the Gillette Super Delivery and the Gillette Super Traction, designed for farm and rural use. The passenger car line includes two new Gillette Ambassadors, one of cotton and the other of rayon construction. A Super Traction is available also for passenger car use.



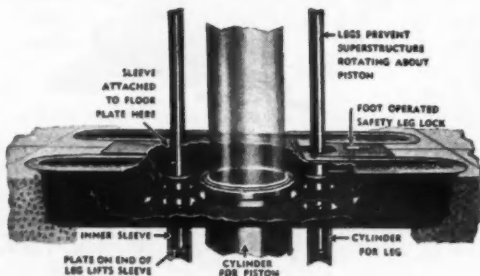
Your 1941 Lift Should do all These Things

- 1 Accommodate trucks of various lengths.
- 2 Make it easy to spot any truck over Lift.
- 3 Provide clear, level floor at all times.
- 4 Give complete underbody clearance for work on chassis.



ONLY JOYCE 2-POST LIFTS with FLUSH FLOOR FORM provide these timely, modern advantages.

The Joyce Flush Floor Form is a new development (patent applied for) that automatically provides a level surface of corrugated steel floor plates completely closing recess in floor occupied by superstructure when Lift is down.



Flush Floor Form
Permanently Installed.

With a Joyce Two-Post Lift with split superstructure your mechanics may now work on a clear, level and safe floor when Lift is raised. When Lift is down, superstructure fits into Floor Form making an unobstructed floor to drive over.

Further details and specifications are given in new Bulletins. Write for them today.

THE JOYCE - CRIDLAND CO.
Dayton, Ohio



JOYCE LIFTS AND JACKS

When writing to advertisers please mention Commercial Car Journal

New Commercial Solvents Line

A completely new line of cooling system chemicals has been announced recently by the Commercial Solvents Corp., 17 East 42nd St., New York, N. Y., maker of Nor'way anti-freeze. Included are a cleaner, a quick-flush compound, an anti-rust solution, and a stop-leak compound. The line will be merchandised under the brand name Nor'way and packaged with a family resemblance to the anti-freeze.

MORE NEW PRODUCTS ON
PAGE 130

COMMERCIAL CAR JOURNAL
APRIL, 1941



With five tons of pig iron aboard this Ford COE is hitting the bumps of the "body twist" section on the Ford proving ground. Part of a run that may take it as high as 70,000 miles, the test includes high speed stretches with various torture tests that range from water and mud baths to Belgian blocks, brick and the concrete twist illustrated here.



The most popular exhibits from the Chrysler Building at the New York World's Fair are currently on tour in the "Plymouth Motor Fair," transported by this caravan of Dodge trucks. The show includes the "Talking Plymouth," the three-dimensional talking picture, the model of the Plymouth factory plus other displays. One of the big trailers houses a complete power plant and another carries 1000 special folding chairs.



"NOW?"

COMMERCIAL CAR JOURNAL
APRIL, 1941

Make WHIZ your buy-word. It identifies a complete line of known quality and dependability.



LIQUID RUBBER White Tire Coating!

Here's the most outstanding product in the field for adding smartness to your motor vehicles.

WHIZ WHITE TIRE COATING is not a paint. It is a liquid Latex! Made only by Hollingshead, from a patented formula. Forms a tough, long-lasting layer of pure white rubber. Will not chip, peel or blister because it is more elastic than the tire itself.

You can give your delivery trucks the added distinction of white wall tires at a fraction of former cost with this remarkable, genuine rubber coating.



CAR BEAUTY and MAINTENANCE PRODUCTS

POLISHES • CLEANERS • TOP DRESSINGS • TIRE COATINGS
RADIATOR SPECIALTIES • BRAKE FLUIDS • ENAMELS
SHOCK ABSORBER FLUIDS • GASKET CEMENTS • SOAPS
ABRASIVE COMPOUNDS • SPECIALIZED LUBRICANTS

R. M. HOLLINGSHEAD CORPORATION, CAMDEN, N. J., TORONTO, CAN.
World's Oldest and Largest Manufacturers of Automotive Chemicals



***"Here's one of
236 Reasons why
we rely on THERMOID"***

... LAWRENCE GEROSA
of Gerosa Haulage and Ware-
house Corp., New York City

"We have 236 units on the road—the largest fleet of its kind in the country," says Mr. Lawrence Gerosa of Gerosa Haulage and Warehouse Corp., New York City. "And because we use our entire fleet as a proving ground, I know what I'm talking about when I say that Thermoid Brake Lining is in a class by itself. I'll pick Thermoid every time for smooth, safe stops—and lowest cost per mile."

Mr. Gerosa's statement in itself is ample proof of Thermoid superiority. But it's only one indication of Thermoid's acceptance by a steadily growing number of the country's leading truckers. That's why we feel confident in asking you to try Thermoid under your own conditions. Pick out your toughest unit—give Thermoid a real test—judge by the results.

Thermoid

CUSTOM-BUILT BRAKE LINING SETS • CBB SETS
THERMO-BLOCKS FOR HEAVIEST DUTY

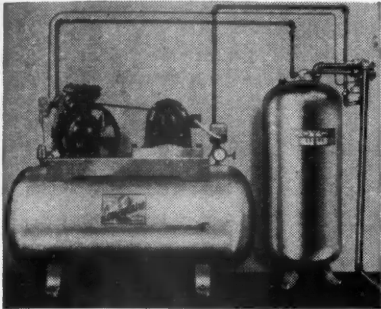
★ THERMOID COMPANY ★ *Trenton, New Jersey* ★

NEW PRODUCTS

(CONTINUED FROM PAGE 126)

Conservitaire Power Units

A new line of air compressor units has been put on the market by the Joyce-Cridland Co., Dayton, Ohio. The Conservitaire unit, designed for economy in hydraulic lift operation, returns air from the oil tank back to the live air tank when the lift



is lowered, thus reducing the time of operation of the compressor. The unit illustrated is Model JH11-T16, two-stage, two-cylinder Junior Conservitaire. Included in the complete line are horizontal and vertical models, single and two-stage compressors, with motors rated at $\frac{3}{4}$, 1 and $1\frac{1}{2}$ hp.

Hickman Full Floating Seats

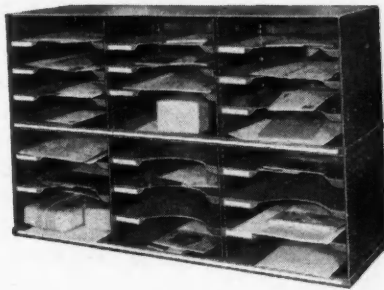
A new truck seat embodying full floating construction has been announced by the Hickman Pneumatic Seat Co., Inc., Eden, N. Y. The frame unit is mounted on coil springs and supported at the back by rubber bushed linkage. The back and bottom



cushions are fastened to the frame, causing both cushions to move in unison. The cushions are finished in a green imitation leather upholstery fabric. Adjustable seat fittings can be furnished as optional equipment at a slight additional cost.

Lyon Steel Rack

A new steel sorting rack, which may be used for various paper forms as well as for storing sandpaper and small tools and parts, is announced by Lyon Metal Products, Inc., Aurora, Ill. The rack of spot-weld construction is equipped with nine removable shelves, complete with label-holder, which are adjustable every half inch. One of the features is a recessed



bottom, which permits racks to be stacked securely. Each rack is $34\frac{1}{3}$ in. wide by $11\frac{1}{2}$ in. deep x 10% in. high.

Shelving Equipment by Aurora

A new line of improved, high load capacity steel shelving, storage and display equipment is available from the Aurora Equipment Co., Aurora, Ill. Three different types of steel shelves with load capacities ranging up to 700 lb. for a 12 x 36-in. shelf form the basis for the new equipment. A new channel-type reinforcement, welded to the shelf itself, gives greater rigidity and strength. Shelves and supporting uprights are available in a standard color of olive green baked enamel.



STEWART-WARNER MOTOR MILE TACHOMETER!



GASOLINE mileage stepped up 1.7 miles per gallon! 15,000 miles more service between overhauls! Maintenance costs reduced! These are *only a few of the results reported* by fleet owners following the installation of Stewart-Warner Motor Mile Tachometers!

These savings are a direct result of *knowing the power and economy range*—as shown by the two stationary red pointers on the tachometer—and keeping the motor speed within that range! This is easy for the driver to do—it's just a matter of keeping the tachometer pointer

between the two red pointers. And the Stewart-Warner Motor Mile Tachometer is the only instrument on the market which provides this vital information at all times!

Furthermore, this amazing instrument records r.p.m. in terms of *motor miles*, whenever motors are turning, making it possible for you to service trucks on a basis of actual *motor miles* instead of *road miles*—which may mean cutting repair bills as much as 25%!

Mail the coupon now for complete information!

STEWART WARNER MOTOR MILE TACHOMETER

STEWART-WARNER CORPORATION
1876 Diversey Parkway • Chicago, Ill.

STEWART-WARNER CORPORATION
1876 Diversey Parkway, Chicago, Ill., Dept. D
I operate... Trucks. Please give me all the facts
about cutting my operating costs with Stewart-
Warner Motor Mile Tachometers.

Name.....

Address.....

City.....State.....

Firm Name.....

SERVICING THE WHITE HORSE ENGINE

WITH the widening use of the White Motor Co.'s White Horse delivery unit considerable interest has developed regarding its servicing. There are short cuts in the procedure, of course, and it is the purpose of this article to make the work as easy as possible. Following is a fairly comprehensive description of the White Horse engine and

the recommended methods of handling.

The White Horse engine is mounted integrally with the clutch, transmission and rear axle. This entire rear unit can be removed easily, making it accessible for service work. The engine itself is a 4-cycle, 4-cylinder, air-cooled, valve-in-head type with cylinders horizontally opposed. Mounted on the top are the distributor, carburetor, and intake manifold. The exhaust manifold is located on the bottom. On the left side of

the engine is the generator, driven from the crankshaft by a V-belt. On the right side are the oil filler pipe, oil level gage, and starting motor.

Specifications of the White Horse engine are as follows:

Bore and stroke, 3 $\frac{5}{8}$ in. x 3 $\frac{5}{8}$ in.
Piston displacement, 150 cu. in.
Compression ratio, 5.5 to 1.
A.M.A. horsepower, 21.
B.H.P. at governed speed (2500 RPM), 40.
Torque (1200 RPM), 100.
Crankcase oil capacity, 3 $\frac{1}{2}$ qts.

Engine clearances and adjustments are as follows:

Cylinder head to cylinder, .004-.008 in. shrink fit at 500 deg. F.
Piston clearance in cylinder bore, .002-.003 in.
Piston ring gap clearance, .010-.020 in.
Piston pin clearance in piston, .0002-.0007 in.
Main bearing clearance, .0015-.0035 in.
Crankshaft end play, .002-.012 in.
Connecting rod bearing clearance, .0015-.0035 in.
Connecting rod end play, .006-.012 in.
Valve stem to guide clearance, .002-.0038 in.
Valve tappet clearance, none; hydraulic lifters, .040-.060 in.
Valve seat angle, 30 deg.
Tension wrench torque for connecting rod bolts, 273-315 in. lb.
Tension wrench torque for main bearing cap bolts, 336-357 in. lb.
Oil pressure, 30-40 lb. with warm engine running at about 2000 rpm.
Breaker gap, .020 in. max.
Breaker spring tension, 17-20 oz.
Spark plug gap, .031 in.
Ignition timing, 12 deg. or 1 5/16 in. on flywheel before top dead center.
Firing order, 1-4-2-3.

The White Horse engine has cylinder heads of aluminum alloy with alloy iron valve guides and valve seats shrunk in place. The head is likewise attached to the barrel with a shrink fit. The base of the cylinder barrel pilots in the crankcase, and valve servicing is done by removing the cylinder from the crankcase. The valves are resealed without disturbing the head.

The crankcase is a separate casting with the cylinders bolted to it, and including the oil sump. Access to this unit is provided by a small plate bolted to the underside below the fuel pump.

The crankshaft is Tocco hardened and ground, fully counter weighted and balanced. It is mounted in three special copper-lead lined, steel-backed bearings, similar to the connecting rod bearings. The pistons are Parkerized and fitted with three 3/16 in. compression rings above piston pin

IN THE TOUGH SPOTS—

IT PAYS FOR ITSELF
OVER AND OVER AGAIN

THORNTON *Automatic Locking* DIFFERENTIAL

In tough going you need traction — positive rim pull in mud, sand, ice or snow.

You get that TRACTION with a THORNTON Automatic-Locking DIFFERENTIAL. It assures steady work when trucks not so equipped are forced to give up. Saves gas, oil and tires—quickly pays for itself.

Spinning of one wheel is eliminated since *both* rear wheels must rotate when power is applied. This means that your truck will pull out of deep mud holes or over slippery, treacherous surfaces with ease and safety. Write today for the whole interesting story.

SIMPLE IN OPERATION
and
SIMPLE TO INSTALL



THORNTON TANDEM COMPANY

8701-8779 GRINNELL AVE.
DETROIT, MICH.

"When you need TRACTION you need THORNTON"

and one 3/16 in. oil ring below the piston pin. The poppet type valves have 3/8 in. diameter tip-hardened stems. Hydraulic type tappets are mounted horizontally.

The camshaft, a heat-treated drop forging, is located under the crankshaft and is supported by two steel-backed, babbitt-lined bearings in the crankcase. An integral gear, located at the rear end of the camshaft, meshes with the oil pump shaft gear to operate the oil pump and distributor. The camshaft is driven from the crankshaft by conventional timing gears, so that proper timing depends upon correct meshing of these gears. Marks on the gear faces make it easy to position them correctly.

The oil pump is bolted to a plate on the crankcase and can be quickly removed from the bottom of the engine. In service work, it is advisable to remove the ignition distributor whenever the oil pump is taken out because an extension of the pump shaft drives the distributor. When installing the oil pump, the engine should be rotated until the No. 1 piston is on the compression stroke and the mark "TDC" on the flywheel indicates top dead center for this piston. This mark is visible through a timing hole in the flywheel housing on the left side of the engine. Now insert the distributor with the rotor pointing to No. 1 cylinder. Next insert the oil pump, dovetailing the slot in the oil pump extension shaft with the key in the distributor shaft, and bolt the pump solidly to its supporting plate.

It is not difficult to resurface distributor contacts without removing the distributor from the engine. Simply remove the contacts and resurface with a fairly coarse oil stone, rounding the edges slightly for a good center contact. Replace contacts and set the contact spring tension. Then rotate the engine until the breaker points are fully separated when you can adjust the gap by loosening the lock screw on the movable point and turning.

The carburetor is a Zenith down-draft, fixed-jet type. A conventional adjustment screw regulates the air, providing a leaner idle mixture when turned outward, and a richer mixture when turned in. The idling system for low fuel consumption functions while idling or at speeds up to 20 miles per hour.

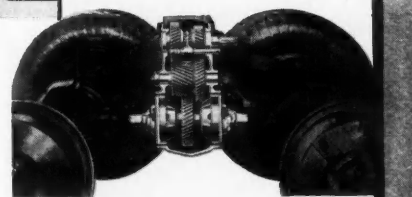


The Mueller Truck Line, which hauls principally packing house products between Kansas City and Chicago is proud possessor of this new fleet of Fruehauf stainless steel trailers, most of which are equipped with Thermo-King self-contained refrigerating units affording adequate protection for perishable loads.

HAUL BIGGER LOADS



GET MORE TRACTION



SAVE ON EVERY TON-MILE

For real pulling power TWO driving axles under the load are far better than one.

With the THORNTON four-rear-wheel DRIVE, in addition to increased capacity and traction you get more flexible operation since you have two transmission ratios—one for power and one for speed. Your investment in equipment is 25 to 40% less, your operating and upkeep costs are from 30 to 50% lower. With THORNTON "Walking-Beam" spring design less shock reaches vehicle and load.

We can show you how to save with a truck equipped with THORNTON four-rear-wheel DRIVE. Users in scores of industries are lowering costs.

THORNTON TANDEM COMPANY

8701-8779 GRINNELL AVE.
DETROIT, MICH.

"When you need TRACTION you need THORNTON"

NADA Sets Up Program to Alleviate Mechanic Shortage

THE National Automobile Dealers Association has developed a program to help its members meet the impending shortage of mechanics. So closely does the problem of the automobile dealer parallel that of the fleet operator that the program might well have been designed with the fleet operator in mind.

Warning that the automotive in-

dustry is going to lose men to defense industries and to the draft has been sounded by Wm. S. Knudsen, director of the Office of Production Management; C. R. Dooley, director of Training Within Industry of the same office, and A. F. Hinrichs, Acting Commissioner of Labor Statistics. These men along with other business leaders recognize the vital nature of replacing skilled men with trained labor.

Specifically the NADA program

suggests that every employer of mechanical labor should study their shops and determine how many replacements he should provide against the certain demand for mechanics by:

1. Determine the exact draft status of each mechanic.

2. Study the probable effects on your business of the general increase in business which the Defense Program will bring.

3. Recognize the competition for labor which will come from the defense industry. Determine to train a certain number of men in anticipation of this competition which is sure to come.

4. Make every effort to retain the men you now employ. A careful study of working conditions, wage scales, etc., may lessen the likelihood of your men being attracted to other industries. Point out to them the advantages of permanent employment.

5. After giving consideration to all of these factors arrive at a definite total figure which will be the total number of men you seek to have available against this inevitable demand.

In large communities where there are associations it is suggested that the effort should be cooperative. In order to get the needed men the following steps are suggested:

6. Look over the men in your shop and find those who are not rated as mechanics but who are capable of doing mechanic's work. Also pick out those who are not doing mechanic's work but who with a little training could do at least some service operations.

7. Survey the employment bureaus, the acquaintances of your employees, etc., and the opportunity to rehire men who have left industry because of age or minor physical disabilities or for other reasons.

8. Start training the men. Remember when the need for mechanics becomes acute there will be none available since they will all have gone to the defense industries.

It is suggested that men be trained in special jobs since their training will become effective much faster that way than if they were trained as general mechanics. In larger shops it is suggested that competent mechanics should be relieved of their maintenance work and be used entirely as instructors.

The same bearings used as original equipment in the majority of car, truck and tractor motors

● Made on the same machines—to the same blue-prints—from identical bearing metal formulae—subjected to the same 100% inspection, by the same skilled inspectors as the modern, steel-back insert-type bearings used by the majority of manufacturers... Monmouth Engine Bearings assure you the utmost in bearing quality, precision and endurance... On every motor overhaul—For Engine Bearings—Monmouth is the Name!

MONMOUTH PRODUCTS COMPANY

1931 EAST 61st STREET, CLEVELAND, OHIO, U. S. A.

Engine Bearings • Clutch Plates and Clutch Parts
King Bolt Sets

Master stocks of Monmouth Engine Bearings are maintained in NAPA Warehouses from coast to coast, assisting hundreds of jobbers in every section of the country to give prompt service even on rarely called-for numbers.

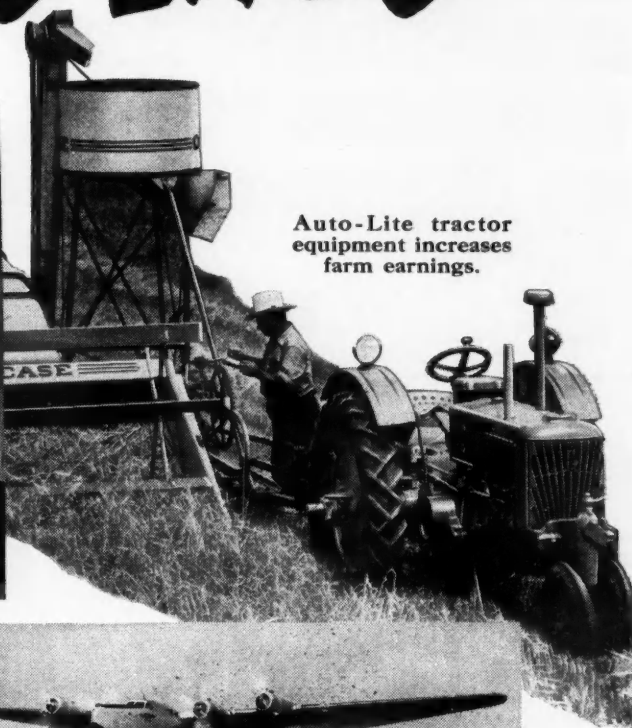


Monmouth
Is the Name!

WHEREVER LOW COST OPERATION COUNTS YOU CAN COUNT ON AUTO-LITE!



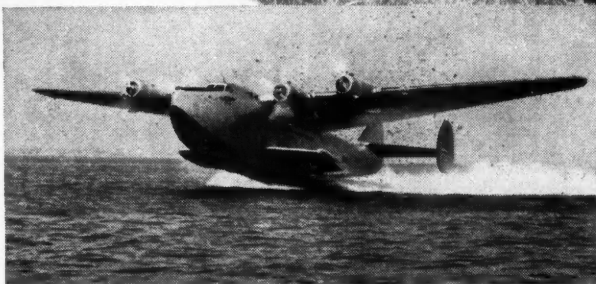
Leading automotive manufacturers use Auto-Lite electrical units.



Auto-Lite tractor equipment increases farm earnings.

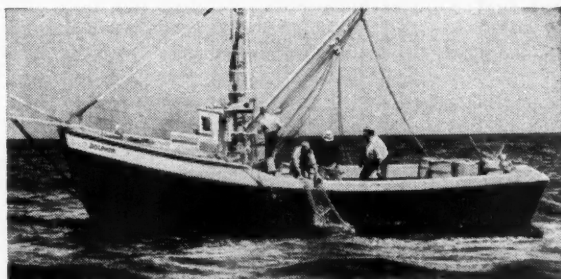
PROOF of Auto-Lite dependability is written indelibly in the cost records of the truck transportation industry. Driver, mechanic, owner and builder alike know the consistent performance and economy that Auto-Lite starting, lighting and ignition give in this exacting service. Service improves, costs go down, whenever Auto-Lite equipment goes on the job.

For faultless electrical performance, insist on Auto-Lite starting motors, generators, coils, distributors, batteries, switches, wiring harness, horns, current and voltage regulators, "Sealed Beam" and Auxiliary lights. If you want to maintain schedules, and cut operating costs, see that your next truck is Auto-Lite equipped.



The Trans-Oceanic Clippers, the world's most exacting transportation service, use Auto-Lite batteries exclusively.

AUTO-LITE ANNOUNCES SAFETY DIRECTOR AWARDS—The Electric Auto-Lite Company announces annual awards in the National Truck Safety Contest of The American Trucking Associations. Presentations will be made to individuals responsible for safety in the fleets winning first and second places in each of the two divisions: Local Operation and Long Distance Operation for fleets of vehicles of 11 to 25, 26 to 50, 51 to 100, and 101 and over.



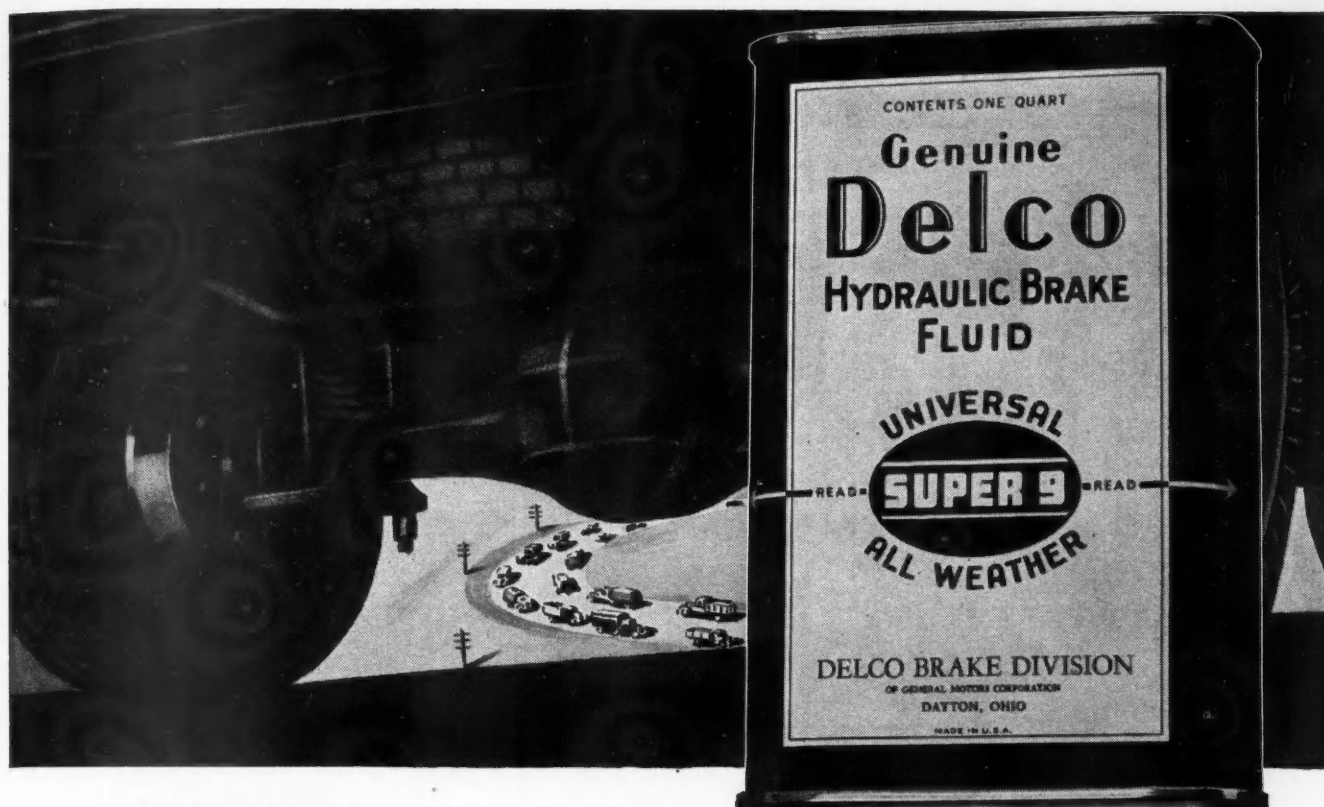
More boats take the water equipped with Auto-Lite than any other starting, lighting and ignition.

THE ELECTRIC AUTO-LITE COMPANY
TOLEDO, OHIO SARNIA, ONTARIO

AUTO-LITE

SPARK PLUGS • STARTING
LIGHTING • IGNITION
BATTERIES • WIRE & CABLE

THE WORLD'S LARGEST INDEPENDENT MANUFACTURER OF AUTOMOTIVE ELECTRICAL EQUIPMENT



NOW, more than ever, it's wise to standardize on **DELCO SUPER 9** **HYDRAULIC BRAKE FLUID**

More and more traffic on the streets and highways—more need than ever for safe, sure brakes in fleet operations! With more frequent braking, wheel cylinders are heated up—often to temperatures as high as 270° F. Under these conditions,

Delco Super 9 hydraulic brake fluid prevents vapor-lock. It is safe even at 300° F. In cold weather, Delco Super 9 remains fully effective at temperatures as low as 50° below zero—safeguards against sluggish brake action resulting from the dangerous thickening of some fluids.

And Delco Super 9 hydraulic brake fluid is a leader in all other important characteristics that make for safety and real economy, as the chart shows. It is original equipment in all General Motors cars, trucks and buses. *Right now*, it's wise to standardize on Delco Super 9.

Flush with Declene . . . For maximum safety, flush out questionable brake fluid, gum deposits and dirt with Declene flushing fluid. Then refill with safe Delco Super 9.

FLUID	RATING IN RESPECT TO:							
	HEAT	STABILITY	COLD	LUBRICATION	RUBBER	MISCIBILITY	METALS	EVAPORATION
DELCO SUPER 9	A	A	A	B	A	A	B plus	B plus
TYPE 2	B	C plus	B	B	C	B plus	B plus	B
TYPE 3	C	D plus	E plus	B plus	C	B	B plus	B
TYPE 4	E	C plus	D	B	B plus	B	B	D
TYPE 5	A	C plus	D plus	B	D	B	D plus	B plus
TYPE 6	E	D	D	D	B plus	E plus	E plus	E
TYPE 7	A	C plus	D plus	B	B plus	B plus	B	B plus
TYPE 8	E	C plus	D plus	B	B plus	B	B	E plus
TYPE 9	A	C plus	D plus	B	B	B	C plus	B plus

KEY: A—Excellent. B—Good. C—Fair. D—Poor. E—Extremely Unsafe

This chart shows the results of careful laboratory tests of nine groups of brake fluid now on the market.



Delco Super 9, Declene and Delco Brake replacement parts are distributed by United Motors Service and Bendix distributors.



Delco

BRAKE DIVISION

GENERAL MOTORS CORPORATION, DAYTON, OHIO

STANDARD FOR EQUIPMENT—THE STANDARD FOR REPLACEMENT

CHARGING CONTROLS

(Continued from Page 138)

UNIT MODEL NUMBER	CUT-OUT RELAY		CURRENT REGULATOR		VOLTAGE REGULATOR		UNIT MODEL NUMBER	CUT-OUT RELAY		CURRENT REGULATOR		VOLTAGE REGULATOR	
	Closing Volts	Opening Amps.	Point Open (Inches)	Current Setting (Amp.)	Voltage Setting Closed Circuit (†) Open Circuit (°) Volts-Points Open (°)			Closing Volts	Opening Amps.	Point Open (Inches)	Current Setting (Amp.)	Voltage Setting Closed Circuit (†) Open Circuit (°) Volts-Points Open (°)	
DELCO-REMY (Cont.)						70°F. 150°F.							70°F. 150°F.
5850	6.3-6.9	0-3.0			9.3-8.7	7.7-8.2	1118210	12.4-13.4	0-4.0		16-18		14.0-14.2
5852	6.3-6.9	0-4.0		34-36	7.0-7.4	6.9-7.1	1118212	6.2-6.7	0-4.0		38-40		7.0-7.2
5854	6.9-7.6	0-4.0	.020	28-31	7.0-7.4	6.9-7.1	1118214	12.4-13.4	0-4.0		24-26		14.0-14.2
5856	12.3-13.7	0-4.0	.020	14-16	14.2-15.0	14.1-14.5	1118215	6.2-6.7	0-4.0		22-24		7.0-7.2
5862	6.2-6.8	0-4.0			7.3-7.6	7.2-7.3	1118218	12.4-13.4	0-4.0		7-9		14.0-14.2
5863	6.3-6.9	0-4.0			7.6-8.0	7.5-7.9	1118222	6.2-6.7	0-4.0		34-36		7.0-7.2
5865	12.4-13.6	0-4.0			14.2-15.0	14.1-14.5	1118225	12.4-13.4	0-4.0		14-16		14.0-14.2
5870	6.2-6.8	0-4.0			7.3-7.6	7.2-7.3	1118227	12.4-13.4	0-4.0				14.0-14.2
5877	6.3-6.9	0-4.0		28-30	7.0-7.4	6.9-7.1	1118229	6.2-6.7	0-4.0		34-36		7.0-7.2
5885	6.3-6.8	0-4.0	.020	38-40	7.0-7.4	6.9-7.1	1118230	6.2-6.7	0-4.0		28-28		7.0-7.2
1118201	6.2-6.7	0-4.0		32-34		7.2-7.4	1118231	6.2-6.7	0-4.0				7.2-7.4
1118204	6.2-6.7	0-4.0				7.2-7.4	1118232	6.2-6.7	0-4.0		34-36		7.0-7.2
1118206	6.2-6.7	0-4.0				7.2-7.4	1118233	6.2-6.7	0-4.0		24-26		7.0-7.2
1118208	6.2-6.7	0-4.0		28-30		7.0-7.2	1118234	6.2-6.7	0-4.0		24-26		7.0-7.2
1118209	12.4-13.4	0-4.0		16-18		14.0-14.2	1118236	6.2-6.7	0-4.0		26-28		7.0-7.2
							1118237	6.2-6.7	0-4.0		38-40		7.0-7.2

GENERATORS

ELECTRICAL EQUIPMENT

TEST SPECIFICATIONS

GENERATOR ABBREVIATIONS

- *—Output at given speed—not necessarily maximum output.
 †—Field current at 32 volts.
 ‡—Maximum R.P.M. for 8 Amps. at 15.0 volts.
 °—At 13 Volts.
 †—Maximum R.P.M. for 8 amperes at 8 volts.
 Cold test given at 70° F. For each 15° above this, subtract one ampere.
 °—Field current at 112 volts.
 ‡—Fixed third brush unit, 8.0 volts.

GENER- ATOR MAKE AND MODEL	MAXIMUM OUTPUT						
	Field Amps. at 6 Volts	COLD			HOT		
		Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
AUTO-LITE							
DG-4021	2.38-2.63	28.6-30.6	8.0	1600	22.0-24.0	8.0	1850
DG-4023	2.38-2.63	28.6-30.6	8.0	1600	22.0-24.0	8.0	1850
DG-4302	2.38-2.63	28.6-30.6	8.0	1600	22.0-24.0	8.0	1850
DG-4310	2.38-2.63	28.6-30.6	8.0	1600	22.0-24.0	8.0	1850
DG-4311	2.38-2.63	22.0-24.0	8.0	1650	18.4-20.4	8.0	1800
DGA-4302	2.56-2.84	29.5-31.5	8.0	2250	23.8-25.8	8.0	2500
DGA-4601	2.56-2.84	29.5-31.5	8.0	2250	23.8-25.8	8.0	2500
GAM-4604	3.69-4.31	15.5-17.5	8.0	2050	12.8-14.8	8.0	2050
GAM-4604B	3.69-4.31	15.5-17.5	8.0	2050	12.8-14.8	8.0	2050
GAR-4315	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4515	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4622	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4625	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4643	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4645	3.61-3.89	15.0-17.0	8.0	2300	13.0-15.0	8.0	2370
GAR-4607	3.70-4.10	19.0-21.0	8.0	2400	17.0-19.0	8.0	2500
AGR-4606C	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAR-4606E	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAR-4608B	3.75-4.15	22.4-24.4	8.0	2450	19.0-22.0	8.0	2700
GAR-4614-5	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAR-4622	3.70-4.10	19.0-21.0	8.0	2400	17.0-19.0	8.0	2500
GAR-4623	3.75-4.15	22.4-24.4	8.0	2450	19.0-22.0	8.0	2700
GAR-4624	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAR-4631	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAR-4635	3.61-3.89	20.4-22.4	8.0	2500	16.4-18.4	8.0	2500
GAS-4139A	3.60-4.20	13.3-15.3	8.0	2950	9.5-11.5	8.0	2950
GBB-4304	3.32-3.68	16.0-18.0	15.0	1350	13.0-15.0	15.0	1500
GBD-4002	2.0-2.2	20.0-22.0	8.0	1900	16.0-18.0	8.0	2050
GBE-4601	2.75-3.05	14.0-16.0	15.0	2350	10.0-12.0	15.0	2600
GBG-4601	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBG-4602	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBG-4603	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBG-4604	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBG-4606A	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBG-4611A	1.38-1.52	40.0	15.0	1065	40.0	15.0	1120
GBM-4601	3.60-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500
GBM-4602	3.60-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500

GENER- ATOR MAKE AND MODEL

MAXIMUM OUTPUT

GENERATOR MAKE AND MODEL	Field Amps. at 6 Volts	COLD			HOT		
		Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
GBM-4604A	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4604B	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4606	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4606-1	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4606B	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4607A	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4607B	3.80-4.20	17.0-19.0	8.0	2250	14.8-16.8	8.0	2550
GBM-4608A	3.80-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500
GBM-4608B	3.80-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500
GBM-4608D	3.80-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500
GBM-4612A	3.80-4.20	19.0-21.0	8.0	2100	17.0-19.0	8.0	2500
GBR-4605	4.18-4.62	21.0-23.0	8.0	2650	18.5-20.5	8.0	2850
GBR-4608	4.18-4.62	21.0-23.0	8.0	2650	18.5-20.5	8.0	2850
GBR-4611	4.18-4.62	21.0-23.0	8.0	2650	18.5-20.5	8.0	2850
GBW-4602	1.66-1.84	22.0	8.0	1800	22.0	8.0	2450
GBW-4603D	1.66-1.84	22.0	8.0	1800	22.0	8.0	2450
GBW-4604A	1.66-1.84	22.0	8.0	1800	22.0	8.0	2450
GBX-4601	2.85-3.15	28.8-30.8	8.0	2050	24.9-26.9	8.0	2050
GBX-4601A	2.85-3.15	28.8-30.8	8.0	2050	24.9-26.9	8.0	2050
GBX-4602	2.85-3.15	28.8-30.8	8.0	2050	24.9-26.9	8.0	2050
GBY-4601	2.66-2.94	20.0-22.0	8.0	1300	17.8-19.8	8.0	1350
GBY-4602	2.66-2.94	20.0-22.0	8.0	1300	17.8-19.8	8.0	1350
GCB-4601	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4602	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4604	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4606	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4609A	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4610A	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4614A	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCB-4620	1.50-1.70	25.0	8.0	1030	25.0	8.0	1170
GCD-4601	1.37-1.52	20.0	15.0	1110	20.0	15.0	1400
GCD-4603A	1.37-1.52	20.0	15.0	1110	20.0	15.0	1400
GCE-4606	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4607B	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4608	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4609	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4610	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4612	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4614A	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4615A	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4616A	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4617	1.66-1.84	30.0	8.0	1500	30.0	8.0	1700
GCE-4620A	1.66-1.84	32.0	8.0	1600	32.0	8.0	1800
GCH-4601	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCH-4602	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCH-4603	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCH-4605	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCH-4606	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCH-4608	1.17-1.29	50.0	8.0	1025	50.0	8.0	1125
GCH-4609A	1.17-1.29	40.0	8.0	975	40.0	8.0	1050
GCI-4602B	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850
GCI-4602C	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850

(CONTINUED ON PAGE 142)

 COMMERCIAL CAR JOURNAL
 APRIL, 1941

GAR WOOD

TRUCK AND TRAILER EQUIPMENT

HOISTS

BODIES

WINCHES

CRANES

TANKS

BEST FOR EVERY HAULING NEED

BRANCHES
AND
DISTRIBUTORS
THE WORLD
OVER
Cable Address:
"WOODHOIST"

GAR WOOD INDUSTRIES, INC.

7824 RIOPELLE STREET

DETROIT, MICHIGAN, U. S. A.

World's Largest Manufacturer of Truck and Trailer Equipment

HOISTS and BODIES
ROAD MACHINERY

WINCHES and CRANES
AIR CONDITIONING

TRUCK TANKS
MOTOR BOATS

PLANTS:
DETROIT
HIGHLAND PARK
MARYSVILLE
SAN FRANCISCO
WINDSOR, CANADA

Continued from Page 140 **GENERATOR** Test Specifications

GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT							GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT						
	Field Amps. at 6 Volts	COLD			HOT				Field Amps. at 6 Volts	COLD			HOT		
		Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.			Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
AUTO-LITE (Cont.)															
GCI-4805A	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850	GDJ-4803A	1.48-1.64°	55.0	15.0	1080	55.0	15.0	1180
GCI-4805B	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850	GDJ-4805A	1.48-1.64°	55.0	15.0	1080	55.0	15.0	1180
GCI-4806	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850	GDJ-4806A	1.48-1.64°	55.0	15.0	1080	55.0	15.0	1180
GCI-4808A	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850	GDM-4803	1.41-1.56°	30.0	15.0	1275	30.0	15.0	1435
GCI-4811A	1.90-2.10	24.0-26.0	8.0	2620	20.7-22.7	8.0	2850	GDO-4801A	1.10-1.30	30.0	8.0	840	30.0	8.0	.....
GCM-4802A	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDW-4801	.91-1.01††	10.0	30.0	925	10.0	30.0	.....
GCM-4804	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDW-4801A	.91-1.01††	10.0	30.0	925	10.0	30.0	.....
GCM-4805	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4801	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4807A	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4801C	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4808	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4801D	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4809A	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4802	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4810	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4802A	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4815A	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4804A	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4816A	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4805A	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCM-4826	3.50-3.89	21.0-23.0	8.0	2650	17.0-19.0	8.0	2750	GDZ-4807A	1.60-1.78	30.0-36.7	8.0	2000	30.0-36.7	8.0	2350
GCS-4802	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4801A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4802-5	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4801B	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4803A-5	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4804A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4804A	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4805A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4804B	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4806B	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4804D	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4806C	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4804DA	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4806D	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4805A	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4807	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4806A	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4809	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4806	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4810	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4809A	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4811A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4811A	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4813	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCS-4812	3.56-3.94	19.0-21.0	8.0	2100	15.4-17.4	8.0	2250	GEB-4814	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GCW-4804A	1.35-1.50°	17.0	15.0	1170	17.0	15.0	1280	GEB-4815A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDA-4801	1.66-1.84	28.0	8.0	2025	28.0	8.0	2525	GEB-4816A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDA-4803	1.66-1.84	28.0	8.0	2025	28.0	8.0	2525	GEB-4821A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDA-4803A	1.66-1.84	28.0	8.0	2025	28.0	8.0	2525	GEB-4822A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDB-4805	3.23-3.57°	10.0-12.0	15.0	2050	8.8-10.8	15.0	2200	GEB-4823	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDF-4801	1.90-2.10	29.0-32.0	8.0	3200	26.4-29.4	8.0	3400	GEB-4827	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDF-4801C	1.90-2.10	29.0-32.0	8.0	3200	26.4-29.4	8.0	3400	GEB-4828A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDF-4804B	1.90-2.10	29.0-32.0	8.0	3200	26.4-29.4	8.0	3400	GEG-4829A	1.60-1.78	32.0	8.0	1165	32.0	8.0	1420
GDF-4815A	1.90-2.10	29.0-32.0	8.0	3200	26.4-29.4	8.0	3400	GEG-4811A	1.60-1.78	40.0	8.0	1485	40.0	8.0	1690
GDJ-4802A	1.48-1.64°	55.0	15.0	1080	55.0	15.0	1180	GEG-4813	1.60-1.78	40.0	8.0	1485	40.0	8.0	1690
								GEG-4814	1.60-1.78	40.0	8.0	1485	40.0	8.0	1690
								GEW-4801	1.60-1.78	25.0	8.0	960	25.0	8.0	1250

(CONTINUED ON NEXT PAGE)

WHAT THE WELL-LIGHTED VEHICLE WILL WEAR IN '41

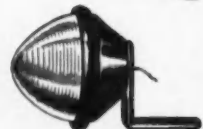


Clearance or Marker Lights

ALL three act in your defense against the perils of after-dark driving . . . all three are the thrifty way of playing safe . . . all three are APPROVED.



**MODEL No. 517
FOR FLAT OR CURVED
SURFACE**



**MODEL No. 506
FOR ANGLE MOUNTING**



**MODEL No. 541
WITH GUARDED FRESNEL
LENS**

Write for new Catalog.

Members by invitation . . . Rice Leaders of the World Ass'n.

The K-D LAMP Co.
CINCINNATI, OHIO



*It holds tight because
THREAD PLAY IS ELIMINATED
with a resilient non-metallic
locking collar*

WHEN an Elastic Stop Nut is applied, thread play is automatically eliminated as soon as the end of the bolt presses against the locking collar which is built into the head of the nut. The load-carrying thread faces of nut and bolt are brought into contact under pressure.

As the bolt works its way through the collar, that pressure is increased. A positive grip is established which can not be loosened by vibration, shock or stress.



FOR a full explanation of the Elastic Stop principle, write for Catalog containing this and other data.

ELASTIC STOP NUT CORPORATION
2349 VAUXHALL ROAD • UNION, NEW JERSEY

Elastic Stop SELF-LOCKING
NUTS

Continued from Page 142 **GENERATOR** Test Specifications

GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT							GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT						
	Field Amps. at 6 Volts	COLD			HOT				Field Amps. at 6 Volts	COLD			HOT		
		Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.			Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
DELCO-REMY															
417	1.35-1.48*	24-26	13.0	1600	18	13.0	3000	639	1.09-1.20*	40	13.0	1100			
419	1.35-1.45*	24-26	13.0	1600	18	13.0	3000	670	3.53-3.75	40	7.0	950			
440	1.39-1.47*	24-26	13.0	1100	18	13.0	3000	671	3.53-3.75	40	7.0	950			
469	1.09-1.20*	40	13.0	1100				672	1.39-1.47*	40	13.0	1400			
506	1.78-1.92*	57	13.0	800				673	3.53-3.75	40	7.0	950			
511	1.78-1.92*	80	13.0	800				674	3.53-3.75	28-30	7.0	1000	22-24	7.0	1200
518	1.78-1.92*	57	13.0	800				677	1.39-1.47*	24-26	13.0	1100	18	13.0	3000
519	1.78-1.92*	80	13.0	800	80	13.0	3000	678	1.39-1.47*	40	13.0	1400			
530	1.09-1.20*	50	13.0	1700				679	3.53-3.75	40	7.0	950			
535	1.09-1.20*	40	13.0	1100				680	3.53-3.75	40	7.0	950			
538	1.09-1.20*	40	13.0	1100				682	1.26-1.33*	33	13.0	950			
539	1.09-1.20*	40	13.0	1100				687	1.35-1.48*	24-28	13.0	1600	18	13.0	3000
550	1.35-1.48*	24-26	13.0	1600	18	13.0	3000	688	3.53-3.75	40	7.0	950			
555	1.35-1.48*	24-26	13.0	1600	18	13.0	3000	689	3.53-3.75	40	7.0	950			
556	1.35-1.48*	24-26	13.0	1600	18	13.0	3000	690	1.26-1.33*	33	13.0	950			
557	1.39-1.47*	13-15	13.0	1200	10	13.0	3000	692	1.26-1.33*	40	13.0	1250			
560	1.12-1.235	14	26.0	1000				693	1.26-1.33*	40	13.0	1250			
561	1.39-1.47*	24-26	13.0	1100	18	13.0	3000	694	1.26-1.33*	33	13.0	950			
563	3.53-3.75	40	7.0	950				695	1.35-1.48*	24-28	13.0	1600	18	13.0	3000
564	3.53-3.75	28-30	7.0	1000	22-24	7.0	1200	696	1.26-1.33*	33	13.0	950			
567	3.5-3.7	38-40	7.0	1500	30-32	7.0	1700	697	1.39-1.47*	40	13.0	1400			
568	1.35-1.48*	24-26	13.0	1600	18	13.0	3000	698	1.39-1.47*	40	13.0	1400			
603	1.2-1.3*	20	13.0	950				699	1.26-1.33*	40	13.0	1250			
604	3.53-3.75	28-30	7.0	1000	22-24	7.0	1200	916B	1.25-1.45*	17	14.5-14.7	1250			
605	1.26-1.33*	20	13.0	950				916D	1.7-2.0	28	8.0	1400			
606	1.26-1.33*	33	13.0	950				916E	1.08-1.15*	17	14.5-14.7	1650			
607	1.26-1.33*	40	13.0	1250				918G	1.25-1.45*	17	14.5-14.7	1250			
608	3.53-3.75	40	7.0	950				918H	1.7-2.0	26	8.1-8.3	1325			
609	3.53-3.75	40	7.0	950				916J	1.25-1.45*	17	14.5-14.7	1250			
613	1.09-1.20*	40	13.0	1100				916K	1.7-2.0	26	8.1-8.3	1325			
614	1.58-1.71	50	7.5	800				925F	2.7-3.0	30	8.0	1800	28	8.0	1900
615	1.09-1.20*	40	13.0	1100				925H	2.7-3.0	30	8.0	1800	28	8.0	1900
616	3.53-3.75	28-32	7.0	1000	22-24	7.0	1200	927X	2.0-2.5*	16-18	13.0	2200	13-15	13.0	2500
622	1.09-1.20*	40	13.0	1100				928B	1.08-1.15*	17	14.5-14.7	1650			
625	1.09-1.20*	40	13.0	1100				930B	1.8-2.3	22	8.0	1100			
630	1.09-1.20*	40	13.0	1100				930C	1.08-1.15*	17	14.5-14.7	1650			
633	1.09-1.20*	40	13.0	1100				930G	1.8-2.3	26	8.0	1450			
634	1.09-1.20*	40	13.0	1100				930H	1.8-2.3	26	8.1-8.3	1450			
637	1.09-1.20*	40	13.0	1100				932A	2.7-3.0	25-28	9.0-9.4	1800	20-24	8.5-8.9	2100
								932B	3.5-4.0	22-24	8.6-9.0	1300	13.5-16.5	7.7-8.1	1700
								934A	1.7-2.0	28	8.0	1400			

(CONTINUED ON NEXT PAGE)

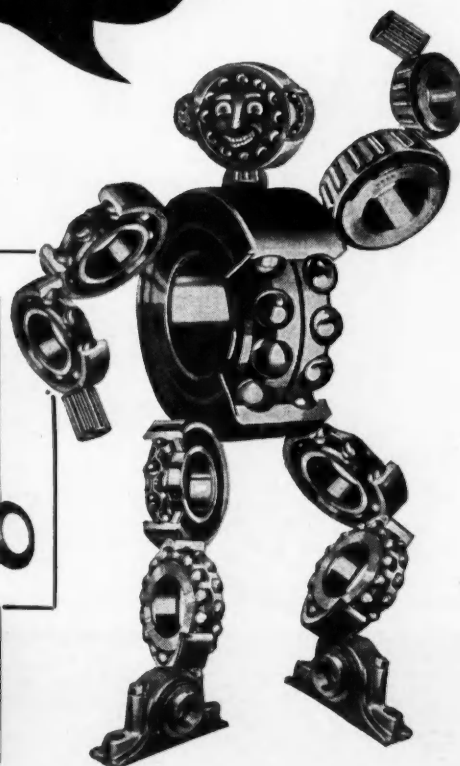
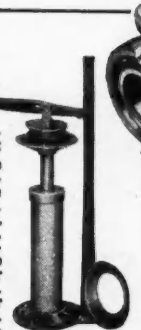
"BEARINGS - Roller, Thrust and Ball - YOUR AHLBERG JOBBER has them all"

HERE'S a Service that gives you satisfaction and saving at the same time: it brings you promptly every size and style of approved ball, roller and thrust bearing needed for replacement; it simplifies the job for you because "All-Bearings are available from a single source"—Your Authorized Ahlberg Bearing Wholesaler.

Try his complete and competent service on your next bearing requirements, standard or special. It's backed up by Ahlberg warehouse stocks and trained bearing specialists at 31 strategic centers. Write or call Ahlberg for the addresses of nearest Ahlberg Branch and Jobber.

Remember! Ahlberg Ground Ball Bearings save an extra 40% when you exchange your loud, worn bearings.

CROFT BEARING PACKER
Here's positive bearing lubrication in one simple operation. Sturdy packer, 5-lb. capacity, accommodates bearings to 7" O.D. Adapter for small sizes. Improved Washer also available. From your Ahlberg Jobber.



Ahlberg Bearing Company

Manufacturers of CJB Master Ball Bearings

3006 WEST 47th STREET — CHICAGO — 30 WAREHOUSE BRANCHES
Out West at PRECISION BEARINGS, INC. Los Angeles

Continued from Page 143 **GENERATOR** Test Specifications

GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT						GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT							
	Field Amps. at 6 Volts	COLD			HOT			Field Amps. at 6 Volts	COLD			HOT			
		Amps.	Volts	R.P.M.	Amps.	Volts			R.P.M.	Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
DELCO-REMY (Cont.)															
934B	1.25-1.45*	17	14.5-14.7	1250			946G	3.5-4.5	15-18	7.9-8.3	2000	13-15	7.7-8.0	2400	
934C	1.7-2.0	28	8.0	1400			946H	3.5-4.5	18-22	8.3-8.7	2400	12-15	7.6-8.0	2600	
934D	1.25-1.45*	17	14.5-14.7	1250			946J	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	1800	
934E	1.7-2.0	28	8.0	1400			946N	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	1800	
934F	1.7-2.0	26	8.1-8.3	1325			946P	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	1800	
934G	1.25-1.45*	17	14.5-14.7	1250			946S	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	1800	
934H	1.7-2.0	28	8.0	1400			948C	2.3-2.6	18-23	8.4-8.8	2800	16-20	8.1-8.5	3100	
934J	1.25-1.45*	17	14.5-14.7	1250			948F	2.3-2.6	17-20	8.2-8.5	2400	13-15	7.7-8.0	3000	
934M	1.7-2.0	28	8.0	1400			948G	2.3-2.6	23-27	8.6-9.0	3000	18-23	8.2-8.7	3200	
934N	1.25-1.45*	17	14.5-14.7	1250			948H	2.3-2.6	23-27	8.6-9.0	3000	18-23	8.2-8.7	3200	
934P	1.7-2.0	28	8.0	1400			948J	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	
934R	1.25-1.45*	17	14.5-14.7	1250			948K	2.3-2.6	17-20	8.2-8.5	2400	13-15	7.7-8.0	3000	
934S	1.7-2.0	28	8.0	1400			948M	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	
934T	1.25-1.45*	17	14.5-14.7	1250			948P	2.3-2.6	18-23	8.4-8.8	2800	16-20	8.1-8.5	3100	
934U	1.7-2.0	28	8.0	1400			948R	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	
934V	1.25-1.45*	17	14.5-14.7	1250			948V	2.3-2.6	17-20	8.2-8.5	2400	13-15	7.7-8.0	3000	
934W	1.7-2.0	28	8.0	1400			952	1.5-1.7*	54	13.0	1000				
934X	1.25-1.45*	17	14.5-14.7	1250			953G	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	
934Y	1.7-2.0	28	8.0	1400			953V	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	
938P	2.3-2.6	18-21	8.2-8.5	2400	15-18	7.9-8.3	955	1.54-1.71*	54	13.0	1000				
935Z	2.3-2.6	17-20	8.2-8.5	2400	13-18	7.7-8.0	956E	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	
936B	2.3-2.6	18-23	8.4-8.8	2500	16-20	8.1-8.5	956D	4.0-6.1	20-22	8.4-8.8	1550	10-12	7.4-7.6	1700	
936M	2.3-2.6	18-23	8.4-8.8	2800	16-20	8.1-8.5	956E	4.0-6.1	20-22	8.4-8.8	1550	10-12	7.4-7.6	1700	
936Z	2.3-2.6	18-23	8.4-8.8	2800	16-20	8.1-8.5	957	1.5-1.7*	54	13.0	1000				
937R	3.5-4.5	18-17	7.9-8.2	1700	10-12	7.4-7.7	957B	4.0-5.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	1400	
937Y	4.0-6.1	18-18	7.9-8.3	2000	13-15	7.7-8.0	957M	2.5-3.0*	11-13	15.1-15.5	1700	7-8.5	14.2-14.8	2000	
938E	4.0-6.1	15-17	7.9-8.1	1400	11-14	7.7-8.0	957T	4.0-5.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	1400	
938J	3.5-4.0*	13-18	15.9-16.6	2800	13-15	15.6-16.0	957W	2.6-3.5	19-21	8.4-8.8	1600	11-14	7.6-7.9	1800	
939V	4.0-6.1	19-21	8.3-8.5	1800	9-12	7.3-7.6	957X	2.5-3.0*	11-13	15.1-15.5	1700	7-9.5	14.2-14.8	2000	
939Y	2.5-3.2*	8-10	14.4-14.6	1500	6-8	14.2-14.4	957Y	1.75-2.25	17-20	8.2-8.5	1900	13-15	7.7-8.0	1800	
941H	4.0-6.1	19-22	8.3-8.7	1650	9-12	7.3-7.7	957Z	2.6-3.5	23-26	8.2-8.5	1900	18-17	7.7-8.1	2200	
942H	4.0-5.9	13-17	7.7-8.0	1600	10-12	7.5-7.7	958A	2.6-3.5	18-20	8.2-8.5	2000	15-17	7.9-8.2	2200	
943J	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	958C	2.6-3.5	18-20	8.2-8.5	2000	15-17	7.9-8.2	2200	
943V	3.5-4.5	15-17	7.9-8.2	1700	10-12	7.4-7.7	958D	2.6-3.5	18-20	8.2-8.5	2000	15-17	7.9-8.2	2200	
945S	4.0-5.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	958E	2.6-3.5	19-22	8.2-8.5	2000	9-12	7.3-7.7	1900	
945W	2.5-3.0*	0-9	14.9-15.2	1500	4-6	13.9-14.5	959L	4.0-6.1	15-17	7.9-8.1	1400	11-14	7.5-7.8	1750	
946B	3.5-4.5	15-18	7.9-8.3	2000	13-15	7.7-8.0	960A	2.3-2.6	23-27	8.6-9.0	3000	18-23	8.2-8.7	3200	
946C	3.5-4.5	16-17	7.9-8.2	1700	10-12	7.4-7.7	960B	2.3-2.6	19-22	8.4-8.8	2800	16-20	8.1-8.5	3100	
946D	3.5-4.5	16-17	7.9-8.2	1700	10-12	7.4-7.7	960C	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	
							960D	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	

(CONTINUED ON NEXT PAGE)

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1947

Continued from Page 144 GENERATOR Test Specifications

GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT							GENERATOR MAKE AND MODEL	MAXIMUM OUTPUT						
	Field Amps. at 6 Volts	COLD			HOT				Field Amps. at 6 Volts	COLD			HOT		
		Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.			Amps.	Volts	R.P.M.	Amps.	Volts	R.P.M.
DELCO-REMY (Cont.)															
960E	2.3-2.6	22-25	8.7-9.1	3000	17-20	8.1-8.5	3200	1102955	1.6-1.7*	18*	15.0	1480			
960F	3.5-4.5	15-18	7.9-8.3	2000	13-15	7.7-8.0	2400	1102957	1.6-1.7*	18*	15.0	1490			
962	1.58-1.71	40	7.5	675				1105201	1.0-1.15*	17	14.5-14.7	1850			
963	1.1-1.2*	40	13.0	1100				1105529	1.7-2.0	28	8.0	1400			
964	1.5-1.7*	54	13.0	1000				1105530	1.7-2.0	28	8.0	1400			
965A	2.5-3.0*	11-13	15.1-15.5	1700	7-9.5	14.2-14.8	2000	1105532	1.7-2.0	28	8.0	1400			
965W	2.8-3.5	23-26	8.8-9.2	1900	13-16	7.7-8.1	2200	1105726	1.25-1.45*	17	14.5-14.7	1250			
965Z	2.5-3.0*	8-10	14.5-15.5	1700	5-7	14.1-14.9	2000	1105727	1.25-1.45*	17	14.5-14.7	1250			
966	1.5-1.7*	54	13.0	1000				1105732	1.25-1.45*	17	14.5-14.7	1250			
967R	4.0-5.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	1400	1105733	1.2-1.4*	17	14.5-14.7	1250			
967V	4.0-6.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	1400	1105734	1.25-1.45*	17	14.5-14.7	1250			
967Y	2.8-3.5	23-26	8.8-9.2	1900	13-16	7.7-8.1	2200	1105735	1.25-1.45*	17	14.5-14.7	1250			
968B	2.5-3.0*	14-16	15.7-16.1	1700	12-14	15.3-15.7	1850	1105738	1.2-1.4*	17	14.5-14.7	1250			
968G	2.8-3.5	22-25	8.7-9.0	1800	13-16	7.8-8.1	2000	1105740	1.2-1.4*	17	14.5-14.7	1250			
968H	2.8-3.5	16-20	8.2-8.5	2000	15-17	7.8-8.2	2200	1105741	1.2-1.4*	17	14.5-14.7	1250			
968J	2.8-3.5	16-20	8.2-8.5	2000	15-17	7.8-8.2	2200	1105742	1.2-1.4*	17	14.5-14.7	1250			
968K	2.8-3.5	16-20	8.2-8.5	2000	15-17	7.8-8.2	2200	1105744	1.2-1.4*	17	14.5-14.7	1250			
968P	2.8-3.5	16-20	8.2-8.5	2000	15-17	7.8-8.2	2200	1105747	1.2-1.4*	17	14.5-14.7	1250			
968T	2.8-3.5	16-20	8.2-8.5	2000	15-17	7.8-8.2	2200	1105752	1.7-2.0	28	8.1-8.3	1325			
968V	4.0-6.9	18-20	8.3-8.5	1300	9-12	7.3-7.6	1400	1105753	.63-.69	5-7	26.0	2000	4.5-6.5	26.0	2000
973E	1.8-1.9	24-26	7.0	1800	19-21	7.0	1800	1105754	.84-.92	6-8	34.0	1800			
973G	.83-.89*	21-23	13.0	2400	16-18	13.0	2800	1105755	.84-.92	6-8	34.0	1800			
974	1.54-1.71*	54	13.0	1000				1105756	.63-.69	5-7	26.0	2000	4.5-6.5	26.0	2000
975J	1.2-1.3*	22-24	13.0	2000	15-17	13.0	2100	1105760	.63-.69	5-7	26.0	2000	4.5-6.5	26.0	2000
975S	1.5-1.7	28-30	9.3-9.6	2000	21-23	8.6-8.9	2000	1105776	1.25-1.45*	17	14.5-14.7	1250			
977E	.58-.63	10	26.0	1200				1105851	1.82-1.94	40*	8.0	1850			
977J	1.5-1.7	28-28	7.0	1400	21-23	7.0	1600	1105854	1.70-1.80	25*	8.0	1150			
977K	1.53-1.67	17-19	7.0	1200	13-15	7.0	1200	1106252	1.53-1.67	17-19	7.0	1200	13-15	7.0	1200
977L	1.53-1.67	28-28	7.0	1400	21-23	7.0	1600	1106253	1.5-1.7	30-31	7.0	2000	28-30	7.0	2100
977P	1.53-1.67	28-28	7.0	1400	21-23	7.0	1600	1106254	1.53-1.67	17-19	7.0	1200	13-15	7.0	1200
977U	1.5-1.7	30-31	7.0	2000	26-30	7.0	2100	1106255	1.53-1.67	17-19	7.0	1200	13-15	7.0	1200
977V	1.2-1.3*	25-28	13.0	2800	23-26	13.0	3000	1106403	1.8-2.0	35	8.0	1040			
977Y	1.2-1.3*	17-20	13.0	1500	13-16	13.0	1500	1106451	1.2-1.3*	8	13.0	640			
978A	1.53-1.67	17-19	7.0	1200	13-15	7.0	1200	1106452	1.2-1.3*	16	15.0	1050			
SM1166	2.5-3.2*	8-10	14.4-14.6	1500	6-8	14.2-14.4	1900	1106455	1.2-1.3*	8	13.0	640			
SM1298	1.1-1.2*	50	13.0	1700				1106576	.91-.98	35	8.0	1400			
SM1301	2.3-2.5*	17-19	16.1-16.6	2200	13-15	15.6-16.0	2200	1106577	.91-.98	35	8.0	1400			
SM1322	1.3-1.5*	16-18	16.1-16.5	2400	11-13	15.1-15.5	2800	1106578	.91-.98	35	8.0	1400			
SM1324	1.1-1.2*	40	13.0	1100				1106579	.91-.98	35	8.0	1400			
SM1325	1.1-1.2*	40	13.0	1100				1106580	.91-.98	35	8.0	1400			
SM1374	1.5-1.7	17-19	7.0	1200	13-15	7.0	1200	1106582	1.5-1.7	40	7.5	1080			
SM1548	1.35-1.48*	24-28	13.0	1600	16	13.0	3000	1106583	1.5-1.7	40	7.5	1080			
SM1549	1.4-1.5*	13-15	13.0	1200	10	13.0	3800	1106584	1.5-1.7	40	7.5	1080			
SM1616	1.2-1.3*	22-24	13.0	2000	15-17	13.0	2100	1106585	1.54-1.67	40	7.5	1080			
SM1680	1.12-1.23*	14	26.0	1000				1106589	1.77-2.0	30	8.0	960			
SM1704	2.6-3.0*	11-13	15.1-15.5	1700	7-9.5	14.2-14.8	2000	1106590	1.54-1.67	40	7.5	1380			
SM1795	2.3-2.6	17-20	8.2-8.5	2400	13-15	7.7-8.0	3000	1106626	1.2-1.3*	25	13.0	1300			
SM1803	4.4-5.0	22-24	8.6-9.0	1400	14-17	7.8-8.2	1900	1106627	1.20-1.27*	25	13.0	1200			
SM1884	1.4-1.5*	24-28	13.0	1100	18	13.0	3000	1106628	1.20-1.27*	25	13.0	1200			
SM1909	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	1106629	1.2-1.3*	25	13.0	1300			
1100004	2.3-2.6	26-30	8.0	3400	25-28	8.0	3600	1106630	1.20-1.27*	25	13.0	1200			
1100006	2.3-2.6	26-30	8.0	3400	25-28	8.0	3600	1106631	1.20-1.27*	25	13.0	1200			
1100008	2.3-2.6	26-30	8.0	3400	25-28	8.0	3600	1106632	1.20-1.27*	25	13.0	1200			
1100451	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	1106633	1.2-1.3*	25	13.0	1300			
1100452	2.3-2.6	17-20	8.2-8.5	2400	13-15	7.7-8.0	3000	1106635	1.20-1.27*	25	13.0	1200			
1100456	2.3-2.6	19-23	8.4-8.8	2800	16-20	8.1-8.5	3100	1106636	1.20-1.27*	25	13.0	1200			
1100458	2.3-2.6	23-27	8.8-9.0	3000	18-23	8.2-8.7	3200	1106637	1.2-1.3*	25	13.0	1300			
1100459	2.3-2.6	18-21	8.2-8.5	2400	15-18	7.8-8.3	2900	1106638	1.2-1.3*	25	13.0	1300			
1100463	2.3-2.6	23-27	8.8-9.0	3000	18-23	8.2-8.7	3200	1106639	1.2-1.3*	25	13.0	1300			
1101390	3.5-4.5	15-17	7.8-8.2	1700	10-12	7.4-7.7	1800	1106640	1.2-1.3*	25	13.0	1300			
1101654	4.0-6.1	19-22	8.3-8.7	1550	9-12	7.3-7.7	1900	1106641	1.2-1.3*	25	13.0	1300			
1101702	2.6-3.1*	11-13	15.0	2400	9-12	14.7-15.0	2600	1106642	1.2-1.3*	25	13.0	1300			
1101708	2.6-3.1*	11-13	15.0	2400	9-12	14.7-15.0	2600	1106643	1.2-1.3*	25	13.0	1300			
1101710	2.6-3.2*	8-10	14.4-14.6	1800	6-8	14.2-14.4	1900	1107013	1.2-1.3*	40	13.0	1250			
1101714	1.5-1.6*	18-21	15.0	3400	15-18	15.0	3500	1117001	1.2-1.3*	40	13.0	1250			
1101716	2.5-3.2*	8-10	14.4-14.6	1500	6-8	14.2-14.4	1900	1117002	1.3-1.5*	24-26	13.0	1600	18	13.0	3000
1101729	1.5-1.67*	8-10	14.4-14.9	2200	6-8	14.1-14.5	2400	1117003	3.5-3.7	28-32	7.0	1000	22-24	7.0	1200
1101736	1.5-1.6*	18-21	15.0	3400	15-18	15.0	3500	1117004	1.2-1.4*	40	13.0	1250			
1101744	1.5-1.65*	18-21	15.0	3400	15-18	15.0	3500	1117005	1.26-1.33*	40	13.0	1250			
1102402	2.8-3.5	18-20	8.2-8.5	2000	15-17	7									

DISTRIBUTOR TEST SPECIFICATIONS

UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.		Rotation Viewed From Top	UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.		Rotation Viewed From Top	UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.		Rotation Viewed From Top
			At Start	Maximum					At Start	Maximum					At Start	Maximum	

AUTO-LITE

IGB4011	.020	17-20	0@400	26@3300	CCW
IGB4304B	.020	17-20	0@600	20@2100	CCW
IGB4318	.020	17-20	0@600	20@3000	CCW
IGB4325	.020	17-20	0@600	16@3000	CW
IGC4062	.020	17-20	0@500	12@3200	CW
IGC4085	.020	17-20	0@600	12@2300	CW
IGC4214A	.020	17-20	0@600	22@2300	CCW
IGC4214B	.020	17-20	0@600	31@2400	CCW
IGC4220C	.020	17-20	0@600	22@2300	CCW

IGC4227A	.020	17-20	0@500	25@2300	CW
IGC4236A	.020	17-20	0@500	32@2900	CCW
IGC4236B	.020	17-20	0@500	17@2400	CCW
IGC4272A-1	.020	17-20	0@550	12@1800	CW
IGC4274A	.020	17-20	0@600	12@2300	CW
IGC4275	.020	17-20	0@600	22@2300	CCW
IGC4283	.020	17-20	0@600	14@1800	CW
IGC4284A	.020	17-20	0@500	25@2300	CW
IGC4285	.020	17-20	0@600	24@2100	CW
IGC4285A	.020	17-20	0@550	12@1800	CW
IGC4407D	.020	17-20	0@700	26@2900	CW

IGC4408	.020	17-20	0@700	26@3300	CW
IGC4418	.020	17-20	0@700	26@3300	CW
IGC4501	.020	17-20	0@700	24@2700	CW
IGC4501-1	.020	17-20	0@700	24@2700	CW
IGC4502	.020	17-20	0@700	26@3300	CW
IGC4502A-1	.020	17-20	0@530	30@2700	CW
IGC4601	.020	17-20	0@500	17@2400	CCW
IGC4601-1	.020	17-20	0@500	17@2400	CCW
IGC4601-2	.020	17-20	0@500	17@2400	CCW
IGC4602	.020	17-20	0@500	17@2400	CCW
IGC4604	.020	17-20	0@1000	25@2300	CW
IGE4003	.020	17-20	0@400	30@2150	CCW
IGE4003F	.020	17-20	0@400	22@1600	CCW
IGE4003G	.020	17-20	0@500	25@1500	CCW
IGE4007A	.020	17-20	0@550	12@1800	CW
IGE4015	.020	17-20	0@600	18@2000	CW
IGE4020	.020	17-20	0@550	12@1800	CW
IGS4007	.020	17-20	0@600	28@3400	CCW
IGS4010	.020	17-20	0@700	24@3500	CW
IGS4101B	.020	17-20	0@700	24@3500	CW
IGS4101B-1	.020	17-20	0@700	24@3500	CW
IGS4103A	.020	17-20	0@700	22@3700	CW
IGS4107	.020	17-20	0@700	24@3500	CW
IGS4107-1	.020	17-20	0@700	24@3500	CW
IGS4107A-1	.020	17-20	0@700	26@2900	CW
IGS4108	.020	17-20	0@700	24@3500	CW
IGS4108-1	.020	17-20	0@700	24@3500	CW
IGS4108A-1	.020	17-20	0@700	24@3500	CW
IGS4108B-1	.020	17-20	0@700	24@3500	CW
IGS4108C-1	.020	17-20	0@700	22@3700	CW
IGS4108D-1	.020	17-20	0@700	26@2900	CW
IGS4109	.020	17-20	0@700	22@3700	CW
IGS4109-1	.020	17-20	0@700	22@3700	CW
IGS4111-1	.020	17-20	0@700	22@3700	CW
IGS4112-1	.020	17-20	0@700	24@3500	CW
IGS4113-1	.020	17-20	0@700	24@3500	CW
IGW4005A	.020	17-20	0@550	12@1800	CW
IGW4006B	.020	17-20	0@600	18@2600	CW
IGW4008	.020	17-20	0@600	20@2100	CCW
IGW4011	.020	17-20	0@600	16@3000	CW
IGW4015A	.020	17-20	0@550	12@1800	CW
IGW4017	.020	17-20	0@600	14@2000	CW
IGW4020	.020	17-20	0@600	13@2000	CCW
IGW4045A	.020	17-20	0@550	12@1800	CW
IGW4101	.020	17-20	0@800	20@2800	CCW
IGW4105C	.020	17-20	0@800	20@4300	CW
IGW4107	.020	17-20	0@600	30@3000	CW
IGW4107A	.020	17-20	0@600	17@2400	CW
IGW4108	.020	17-20	0@600	30@2850	CCW
IGW4108A	.020	17-20	0@600	22@2400	CCW
IGW4109	.020	17-20	0@600	10@1400	CW
IGW4110	.020	17-20	0@800	18@2600	CW
IGW4110A	.020	17-20	0@800	18@2600	CW
IGW4110B	.020	17-20	0@600	12@1800	CW
IGW4110C	.020	17-20	0@550	12@1800	CW
IGW4114A	.020	17-20	0@600	12@2300	CW
IGW4114A	.020	17-20	0@600	12@2300	CW
IGW4114B	.020	17-20	0@800	18@2600	CW
IGW4114C	.020	17-20	0@800	18@2600	CW
IGW4114D	.020	17-20	0@600	12@2300	CW
IGW4114E	.020	17-20	0@600	18@3000	CW
IGW4119	.020	17-20	0@600	30@3000	CW
IGW4119A	.020	17-20	0@600	17@2400	CW
IGW4123	.020	17-20	0@600	12@1800	CW
IGW4123B	.020	17-20	0@600	12@2300	CW
IGW4129	.020	17-20	0@600	19@3000	CCW
IGW4129A	.020	17-20	0@600	28@3400	CCW
IGW4123B	.020	17-20	0@600	12@2300	CW
IGW4129	.020	17-20	0@600	19@3000	CCW
IGW4129A	.020	17-20	0@600	28@3400	CCW
IGW4137	.020	17-20	0@700	24@2000	CCW
IGW4138	.020	17-20	0@700	24@2000	CCW
IGW4147	.020	17-20	0@800	20@2800	CW
IGW4154	.020	17-20	0@800	14@2800	CCW
IGW4158	.020	17-20	0@700	24@2000	CW

MONROE HEAVY DUTY SHOCK ABSORBERS

Monroes have stood the test of time (25 years) in every climate and over the world's toughest roads.

Always leading in engineering and mechanical advancements, Monroes have been approved by practically the entire automotive industry, and are standard equipment on America's finest cars.

AIRPLANE

TYPE

Years of improvement and constant tests have made this the most advanced and sturdy Shock Absorber ever built.

It is made in sizes to meet your requirements.

Fully Guaranteed

STANDARD SIZES

for Trucks, Busses and Trailers

- 1 inch . . . Up to one ton
2 inch . . . Up to five tons
3 inch . . . Above five tons

We shall be glad to quote manufacturers or fleet operators.

MONROE AUTO EQUIPMENT CO.
MONROE, MICHIGAN

MONROE SERVES THE RAILROADS, TOO!

Leading railroads use *Monroe Direct Action Shock Absorbers* on their new trains.

Monroes are the only *Airplane Type Shock Absorbers* approved by railroad engineers to control the springs on high speed trains.

This is evidence of the smooth operation and dependability of Monroes.

DELCO-REMY

622D	.018-.024	17-21	2@600	16@2200	CW
622M	.018-.024	17-21	3@800	28@3000	CW
622R	.018-.024	17-21	2@700	14@2600	CCW
623D	.018-.024	17-21	3@800	20@2200	CW
623G	.018-.024	17-21	3@800	28@3000	CW
623H	.018-.024	17-21	1@600	17@2200	CCW
623K	.018-.024	17-21	2@600	20@3600	CW
623P	.018-.024	17-21	2@800	12@2300	CW
623R	.018-.024	17-21	2@600	16@2200	CCW
625F	.018-.024	17-21	2@600	23@2400	CCW
625G	.018-.024	17-21	2@600	24@2400	CW
625H	.018-.024	17-21	2@600	16@2200	CW
625J	.018-.024	17-21	2@800	18@2000	CCW
625M	.018-.024	20	2@600	23@2400	CCW
632S	.018-.024	17-21	2@900	28@2700	CW
640C	.018-.024	17-21	1@600	20@2000	CW
640L	.018-.024	17-21	2@400	22@2200	CCW
640Z	.018-.024	17-21	1@600	20@2000	CW
642S	.018-.024	17-21	2@600	16@2200	CW
642T	.018-.024	17-21	2@600	20@2800	CW
643F	.018-.024	17-21	2@600	16@2200	CW
643X	.018-.024	17-21	2@690	24@2550	CW
644B	.018-.024	17-21	2@400	20@1600	CW
644C	.018-.024	17-21	2@400	20@1600	CW
644M	.018-.024	17-21	2@600	18@2900	CW
644S	.018-.024	17-21	2@600	16@2200	CW

CONTINUED ON PAGE 148

BELIEVE IT OR NOT! —
"OUR OPERATING COSTS
HAVE BEEN REDUCED 20%"
— SAYS J. W. CALHOUN
 CALHOUN BROS., PHOENIX, ARIZ.



Hauling 25,000 to 40,000 pound loads over the mountains between Phoenix, Flagstaff and El Paso . . . freezing temperatures in winter, 120 degrees in summer . . . isn't exactly duck soup. "With Ring-Free," says Mr. Calhoun, "the motors run cooler and develop more power . . . have less wear and are in cleaner condition than with previous oils used. By increasing mileage between overhauls and

practically eliminating road failures, our operating costs have been reduced 20%." Why not see for yourself how Ring-Free gives you cleaner motors, fewer overhauls, more power, greater gas-mileage? Call the Macmillan Man for proof . . . or write us direct.

MACMILLAN PETROLEUM CORP.
 50 WEST 50TH STREET, NEW YORK • 624 SOUTH MICHIGAN AVENUE, CHICAGO • 530 WEST SIXTH STREET, LOS ANGELES

Believe It or Not! by Ripley

BEFORE USING RING-FREE

(ENGINE HEAD DRAWN FROM ACTUAL PHOTOGRAPHS)

AFTER USING RING-FREE

SHOWING HOW
MACMILLAN RING-FREE MOTOR OIL
REMOVES CARBON AND
CLEANS THE MOTOR
 AS IT DOES ITS REAL JOB OF LUBRICATION!

— as seen by Ripley in Life, Collier's, Time

MACMILLAN
RING-FREE
MOTOR OIL

Reg. U.S. Pat. Off.

Copyright 1941 by
 Macmillan Petroleum Corporation

DISTRIBUTOR TEST SPECIFICATIONS (Continued from Page 146)

UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.			UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.			UNIT MODEL NUMBER	Contact Point Opening	Breaker Arm Tension (Oz.)	Centrifugal Advance Eng. deg. & R.P.M.		
			At Start	Maximum	Rotation Viewed From Top				At Start	Maximum	Rotation Viewed From Top				At Start	Maximum	Rotation Viewed From Top
DELCO-REMY—Continued																	
644V	.018-.024	17-21	4@500	32@1900	CCW	645Z	.018-.024	17-21	4@800	28@4000	CW	649N	.018-.024	20	2@800	17@2400	CW
644X	.018-.024	17-21	3@500	34@3200	CW	647D	.018-.024	19-23	2@400	28@3800	CCW	649R	.018-.024	20	2@700	26@2100	CW
645E	.018-.024	17-21	2@500	22@2200	CW	647F	.018-.024	17-21	2@400	28@3800	CCW	649S	.018-.024	20	5@300	22@1800	CW
645G	.018-.024	17-21	1.5@600	32@3000	CW	647G	.018-.024	20	3@500	27@2400	CW	649T	.018-.024	17-21	2.5@400	36@2300	CW
645J	.018-.024	17-21	2@600	27@3200	CCW	647H	.018-.024	20	2@600	20@2600	CW	649U	.018-.024	20	2@600	22@2200	CW
645K	.018-.024	17-21	2@600	14@3200	CW	647K	.018-.024	17-21	3@500	27@2400	CW	649V	.018-.024	20	2@600	20@2400	CW
645S	.018-.024	17-21	2@400	31@3200	CW	647L	.018-.024	17-21	3@500	27@2400	CW	649W	.018-.024	17-21	2@400	22@2400	CW
645T	.018-.024	17-21	2.2@600	28@3000	CW	649C	.018-.024	20	1@400	27@1800	CW	649X	.018-.024	17-21	2@400	22@2400	CCW
645V	.018-.024	20	2@400	22@2400	CW	649E	.018-.024	17-21	3@600	17@2200	CW	649Y	.018-.024	17-21	3@500	34@3200	CW
645Y	.018-.024	17-21	2@600	20@2800	CW	649F	.018-.024	17-21	2@400	22@2400	CW	68EH	.018-.024	17-21	2@400	24@1800	CCW
						649G	.018-.024	1.7@600	50@3600	CW	686D	.018-.024	17-21	1@600	20@2000	CW	
											686F	.018-.024	17-21	1@600	20@2000	CW	

For Safety's Sake!



No. 1308
SUPER FLARE

Meets I. C. C. requirements. Will burn for 18 hours. Made of 12 gauge steel. Passes every vibration, water, dust and wind velocity test. Three flare containers made of heavy gauge steel. List price, 3 flares in metal box.....\$4.50

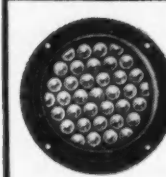
CHECK

TRUCK



No. 80
HEAVY DUTY STOP LAMP

For buses, trucks and trailers. Built of heavy gauge steel. Water and dust proof. Baked enamel finish. 3 inch lens made of high transmission ruby glass. Angle bracket mounting. List price.....\$2.75



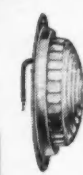
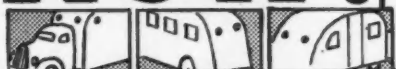
No. 1292
HOBBY REFLEX SIGNAL

For trucks, buses and trailers. Lens moulded in one piece, cannot come loose or get out of focus. Heavy metal frame. Withstands severe abuse. List price.....\$1.00

LIGHTS



NOW!



No. 1173 Flush Type Clearance Lamp

Made of steel. Overall diameter 4 1/4 inches. Extreme height 1 1/2 inches. Durable Udyllite finish. One piece specially designed lens to give maximum amount of light. 1 1/2 cp., 6 volt bulb. List price.....\$0.55

ONE EXTRA LIGHT MAY SAVE A LIFE!



DO-RAY

LAMP COMPANY

1458 S. MICHIGAN AVE. • CHICAGO

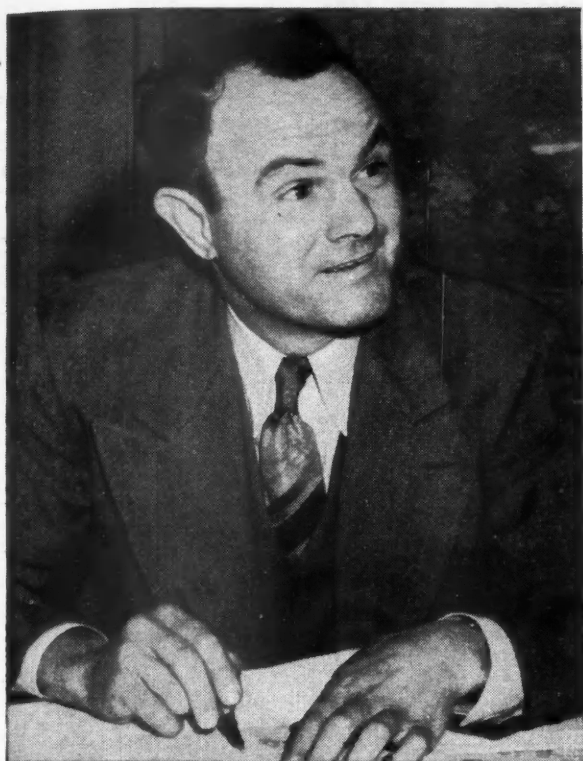
SAFETY LIGHTING AND REFLECTING EQUIPMENT

649N	.018-.024	20	2@800	17@2400	CW
649R	.018-.024	20	2@700	26@2100	CW
649S	.018-.024	20	2@300	22@1800	CW
649T	.018-.024	17-21	2.5@400	36@2300	CW
649U	.018-.024	20	2@600	22@2200	CW
649V	.018-.024	20	2@600	20@2400	CW
649W	.018-.024	17-21	2@400	22@2400	CW
649X	.018-.024	17-21	2@400	22@2400	CCW
649Y	.018-.024	17-21	3@500	34@3200	CW
68EH	.018-.024	17-21	2@400	24@1800	CCW
686D	.018-.024	17-21	1@600	20@2000	CW
686F	.018-.024	17-21	1@600	20@2000	CW
4097	.018-.024	17-21	2@400	12@1400	CW
4119	.018-.024	17-21	3@500	34@3200	CW
4126	.018-.024	17-21	2@400	12@1400	CCW
4127	.018-.024	17-21	1@600	20@2000	CW
4128	.018-.024	17-21	1@600	20@2000	CW
4130	.018-.024	17-21	2@400	12@1400	CW
4140	.018-.024	17-21	2@400	32@2000	CW
4150	.018-.024	17-23	3@500	22@1800	CW
4152	.018-.024	20	3.5@600	21@1400	CW
4154	.018-.024	20	2@400	22@2200	CCW
4171	.018-.024	17-23	2@600	16@2200	CW
4172	.018-.024	17-21	2@700	14@2600	CCW
4173	.018-.024	17-21	3@600	23@3000	CW
4174	.018-.024	20	5@390	22@1800	CW
4175	.018-.024	17-23	2@700	26@2100	CW
4176	.018-.024	20	1@400	27@1800	CW
4177	.018-.024	17-23	2@500	38@2400	CW
4186	.018-.024	17-21	2@400	24@1600	CCW
4199	.018-.024	17-21	2@400	12@1400	CCW
4204	.018-.024	17-21	1@600	20@2000	CW
4205	.012-.017	20	2@500	30@2050	CCW
4209	.018-.024	20	2@400	24@1400	CCW
4213	.018-.024	17-23	2@400	24@1400	CCW
SM1141	.018-.024	17-21	1@600	20@2000	CW
SM1243	.018-.024	17-21	2@600	14@2200	CW
SM1282	.018-.024	17-21	3@500	26@2200	CW
SM1310	.018-.024	17-21	2@400	12@1400	CW
SM1325	.018-.024	17-21	2@400	12@1400	CW
SM1498	.018-.024	17-21	2@400	12@1400	CW
SM1524	.018-.024	17-21	2@400	12@1400	CW
SM1540	.018-.024	17-21	6@600	32@2900	CW
SM1659	.018-.024	17-21	2@400	12@1400	CCW
SM1693	.018-.024	17-21	2@400	20@1800	CW
SM1882	.018-.024	17-21	1@600	20@2000	CW
SM1885	.018-.024	17-21	2@500	22@2200	CW
SM1925	.018-.024	17-21	2@600	16@2200	CCW
1110001	.018-.024	17-21	2@400	22@2400	CW
1110002	.018-.024	20	3@500	20@2000	CCW
1110003	.018-.024	20	2@700	26@2100	CW
1110007	.018-.024	20	1.5@600	50@3600	CW
1110008	.018-.024	17-23	2@400	24@1800	CW
1110011	.018-.024	17-21	2@400	22@2400	CCW
1110016	.018-.024	17-21	2@400	22@2400	CCW
1110018	.018-.024	25	1.7@600	50@3600	CW
1110019	.018-.024	25	1@400	27@1800	CW
1110021	.018-.024	17-21	2@700	14@2600	CCW
1110022	.018-.024	17-21	2@600	27@3200	CCW
1110025	.018-.024	17-21	2@400	18@2200	CCW
1110027	.018-.024	17-21	2@400	22@2400	CW
1110030	.018-.024	17-21	2@600	26@2300	CW
1110031	.018-.024	17-21	3@500	34@3200	CW
1110032	.018-.024	17-21	3@500	34@3200	CW
1110033	.018-.024	17-21	2@400	22@2400	CW
1110034	.018-.024	17-21	2@600	22@2200	CCW
1110039	.018-.024	17-21	2@600	20@2600	CW
1110041	.018-.024	17-21	3@600	17@2200	CW
1110043	.018-.024	17-21	3@800	17@2200	CW
1110044	.018-.024	17-21	2@500	38@2400	CW
1110045	.018-.024	17-23	1.7@600	50@3600	CW
1110046	.018-.024	17-23	2@400	18@2200	CCW
1110049	.018-.024	17-21	2@500	38@2400	CW
1110052	.018-.024	17-21	4@800	37@3100	CW
1110053	.018-.024	17-21	2@600	16@2200	CW
1110055	.018-.024	17-21	2@600	22@2200	CCW
1110056	.018-.024	17-21	2@600	20@2350	CCW
1110057	.018-.024	17-21	2@600	22@2200	CCW
1110059	.018-.024	17-21	3@500	34@3200	CW
1110061	.018-.024	17-21	4@800	37@3100	CW
1110082	.018-.024	17-21	4@800	37@3100	CW
1110084	.018-.024	17-21	2@400	22@2400	CW
1110088	.018-.024	17-21	3@500	34@3200	CW
1110070	.018-.024	17-23	2@400	20@1600	CW
1110071	.018-.024	17-23	2@600	20@2600	CW
1110074	.018-.024	17-23	2@400	20@1600	CW
1110075	.018-.024	17-23	2@400	32@3400	CW
1110079	.018-.024	17-23	3@500	34@3200	CW
1110083	.018-.024	17-23	2@600	20@2600	CW
1110086	.018-.024	17-23	2@600	20@2600	CW
1110088	.018-.024	17-23	2@700	24@2600	CW
1110089	.018-.024	17-23	2@500	29@2300	CW
1110090	.018-.024	17-23	1@600	39@3450	CW
1110094	.018-.024	17-23	2@600	18@2600	CCW
1110095	.018-.024	17-23	2@600	18@2600	CCW
1110098	.018-.024	17-23	2@400	24@1800	CW
1110100	.018-.024	17-23	2@600	22@2200	CCW
1110209	.018-.024	20	2@600	22@2200	CW
1110402	.018-.024	17-21	2@400	24@1400	CCW
1111204	.018-.024	17-21	2@400	14@1850	CCW
1111205	.018-.024	17-23	2@600	9@2000	CCW
1110510	.018-.024	17-23	2@600	20@2400	CCW
1110511	.018-.024	17-23	3@600	28@3000	CCW
1111204	.018-.024	17-23	2@400	24@1400	CCW
1111403	.018-.024	17-23	1@600	20@2000	CW
1111404	.018-.024	17-23	2@400	24@1800	CW

Electrical Specifications (Continued on Page 150)

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941



"Toledo Nitricastiron sleeves giving greater power and flexibility... New gas and oil economy!"

W. J. FORTIER
FORTIER TRANSPORTATION COMPANY
FRESNO, CAL.

NOW PLAN TO EQUIP THE ENTIRE FLEET!

"We wish to advise you of our success in using Toledo Aero-type Pistons, Valves, Guides, Springs, and Nitricastiron Sleeves in the maintenance of our truck fleet!

"The first job we equipped with Nitricastiron Sleeves was our No. 37 powered with a G. M. C. No. 331 motor. This job has run in excess of 225,000 miles and is *giving perfect satisfaction!* When we installed Nitricastiron Sleeves in this job, we were surprised to find that it gave us more power and greater flexibility than did the larger 400 job equipped with regular type parts! Economy in Fuel and Oil was also quite apparent.

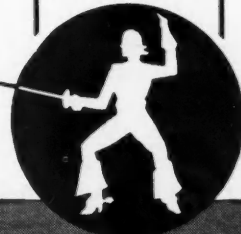
"We will continue to use Nitricastiron Sleeves until the entire fleet is Toledo-equipped!"

Thank you, Mr. Fortier. And here's a timely tip for other fleet operators: See what Toledo can do for you. Phone your Toledo jobber, or write direct.

A COMPLETE TOLEDO LINE FOR YOUR FLEET

Valves . . . Pistons . . . Piston Pins
...Cylinder Sleeves... Sleeve Assemblies . . . Engine Bearings . . . Connecting Rods . . . Water Pumps and Parts . . . Tie Rod Ends . . . Chassis Bolts and Bushings . . . Shackles . . . Independent Front Wheel Suspension Parts.

"SELLING MORE
THAN EVER BEFORE!"



TOLEDO

THE TOLEDO STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U. S. A:

Warehouses: Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Indianapolis • Jacksonville • Kansas City • Memphis • Minneapolis
New York • Oklahoma City • Omaha • Philadelphia • Pittsburgh • Richmond • St. Louis • Wichita • Los Angeles • San Francisco • Portland • Seattle

STARTER TEST SPECIFICATIONS

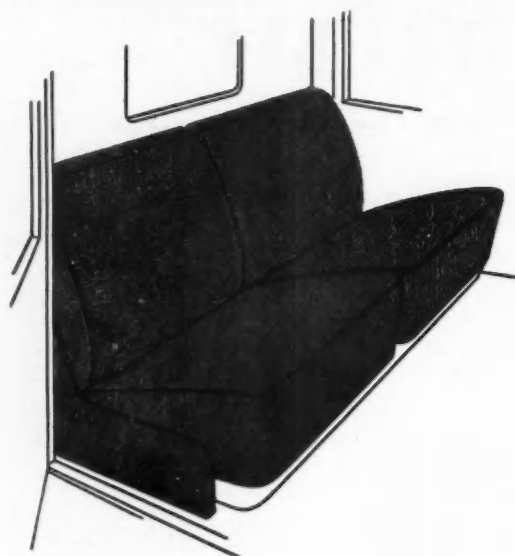
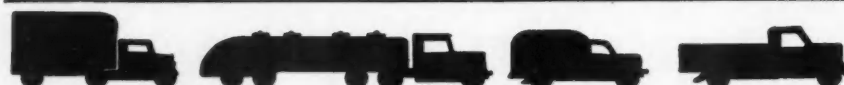
UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD		
	Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM

AUTO-LITE

MAB-4028	3.0	582	15.8	5.5	60	3700
MAB-4030	3.0	582	15.8	5.5	60	3700
MAB-4037	3.0	582	15.8	5.5	60	3700
MAB-4071	3.0	582	15.8	5.5	60	3700
MAB-4078	3.0	582	15.8	5.5	60	3700
MAB-4082	3.0	582	15.8	5.5	60	3700
MAB-4091	3.0	582	15.8	5.5	60	3700
MAB-4093	3.0	582	15.8	5.5	60	3700
MAB-4094	3.0	582	15.8	5.5	60	3700
MAB-4098	3.0	582	15.8	5.5	60	3700

MAJ-4011	3.0	550	12.0	5.5	67	4100
MAJ-4037	3.0	550	12.0	5.5	67	4100
MAJ-4038	3.0	550	12.0	5.5	67	4100
MAJ-4040	3.0	550	12.0	5.5	67	4100
MAJ-4042	3.0	550	12.0	5.5	67	4100
MAK-4001	3.0	380	4.5	5.5	70	5000
MAS-4003	6.0	440	20.0	11.0	35	4100
MAS-4008	6.0	440	20.0	11.0	35	4100
MAS-4011	6.0	440	20.0	11.0	35	4100
MAU-4005	6.0	540	17.3	11.0	65	4800
MAU-4006	6.0	540	17.3	11.0	65	4800
MAU-4009	6.0	540	17.3	11.0	65	4800
MAU-4011	6.0	535	35.0	11.0	65	2500
MAU-4012	6.0	540	17.3	11.0	65	4800

MAU-4013	6.0	540	17.3	11.0	65	4800
MAU-4014	6.0	540	17.3	11.0	65	4800
MAU-4016	6.0	540	17.3	11.0	65	4800
MAU-4022	6.0	540	17.3	11.0	65	4800
MAW-4001	3.0	505	11.5	5.5	65	4900
MAW-4005	3.0	505	11.5	5.5	65	4900
MAW-4013	3.0	505	11.5	5.5	65	4900
MAW-4013A	3.0	505	11.5	5.5	65	4900
MAW-4013B	3.0	505	11.5	5.5	65	4900
MAW-4015	3.0	505	11.5	5.5	65	4900
MAW-4020	3.0	505	11.5	5.5	65	4900
MAX-4007	3.0	640	16.5	5.5	65	5300
MAX-4009	3.0	652	33.5	5.5	77	2700
MAX-4017	3.0	640	16.5	5.5	65	5300
MAX-4018	3.0	640	16.5	5.5	65	5300
MAX-4028	3.0	640	16.5	5.5	65	5300
MAX-4031	3.0	640	16.5	5.5	65	5300
MAX-4031A	3.0	640	16.5	5.5	65	5300
MAX-4031B	3.0	640	16.5	5.5	65	5300
MAX-4032	3.0	640	16.5	5.5	65	5300
MAX-4033	3.0	640	16.5	5.5	65	5300
MAX-4034	3.0	652	33.5	5.5	77	2700
MAX-4035	3.0	652	33.5	5.5	77	2700
MAX-4039	3.0	640	16.5	5.5	65	5300
MBA-4001	3.0	505	11.0	5.5	65	4500
MBD-4003	6.0	590	35.0	20.0	65	5300
ML-4154	3.0	555	18.0	5.5	50	2980
ML-4162	3.0	555	18.0	5.5	50	2980
ML-4163	3.0	555	18.0	5.5	50	2980
ML-4179	3.0	555	18.0	5.5	50	2980
ML-4180	3.0	555	18.0	5.5	50	2980
ML-4186	3.0	555	18.0	5.5	50	2980
ML-4202	3.0	555	18.0	5.5	50	2980
MR-4108	3.0	525	30.0	11.0	50	4300
MR-4115	3.0	525	30.0	5.5	40	2800
MZ-4049	3.0	420	7.8	5.5	70	4300
MZ-4059	3.0	420	7.8	5.5	70	4300
MZ-4059A	3.0	420	7.8	5.5	70	4300
MZ-4064	3.0	420	7.8	5.5	70	4300
MZ-4069	3.0	420	7.8	5.5	70	4300
MZ-4082	3.0	420	7.8	5.5	70	4300
MZ-4083	3.0	420	7.8	5.5	70	4300
MZ-4090	3.0	420	7.8	5.5	70	4300
MZ-4093	3.0	420	7.8	5.5	70	4300
MZ-4099	3.0	420	7.8	5.5	70	4300
MZ-4100	3.0	420	7.8	5.5	70	4300
MZ-4104	3.0	420	7.8	5.5	70	4300



REDO
MEANS
ECONOMY

... that means a lot to fleet owners!

Learn about this leather-like coated fabric's sturdiness ... resistance to cracking and peeling ... all-around durability. Easy to keep clean.

For an upholstery fabric to give real service and economy specify CHASE REDO!

CHASE L. C. CHASE AND COMPANY
295 FIFTH AVENUE, NEW YORK CITY

Branches: Boston Detroit Chicago Los Angeles Mills at Sanford, Me. Reading, Mass. Troy, N.H.



DELCO-REMY

371	3.0	500	19	5.0	70	3000
412	5.3	670	32	11.2	80	4500
413	3.0	500	19	5.0	70	3000
414	5.3	670	32	11.2	80	4500
477	4.8	725	44	12.0	65	4500
486	3.5	500	45	8.0	75	2000
493	4.5	500	30	8.0	60	2000
494	3.5	500	45	8.0	75	2000
541	3.0	600	35	5.7	70	2200
548	5.0	700	51	11.2	75	2400
575	4.8	725	44	12.0	65	4500
578	4.8	725	44	12.0	65	4500
579	4.8	725	44	12.0	65	4500
586	4.8	725	44	12.0	65	4500
587	4.8	725	44	12.0	65	4500
590	5.3	670	32	11.2	80	4500
599	4.8	725	44	12.0	65	4500
640	3.0	500	19	5.0	70	3000
642	5.3	670	32	11.2	80	4500
644	3.5	500	45	8.0	75	2000
646	3.0	500	25	22.0	85	6000
650	3.0	500	25	22.0	85	6000
653	3.0	500	25	22.0	85	6000
655	3.0	500	19	5.0	70	3000
658	3.0	600	24	12.0	100	6000
659	3.0	500	25	22.0	85	6000
660	3.0	600	24	12.0	100	6000
661	5.3	670	32	11.2	80	4500
662	3.0	500	25	22.0	85	6000
663	29.5	100	19	32.0	13	1600
668	3.0	500	25	22.9	85	6000
700	3.0	500	19	5.0	70	3000
704	3.0	600	35	5.7	70	2200
707	3.0	500	25	22.0	85	6000
708	3.0	500	25	22.0	85	6000
709	3.0	600	24	12.0	100	6000
711	3.0	500	25	22.0	85	6000
712E	3.6	450	11	5.0	70	4500
713	5.0	700	51	11.2	75	2400
714	3.0	500	19	5.0	70	3000
714B	3.4	525	12	5.0	65	5000
714G	3.4	525	12	5.0	65	5000
718D	3.1	570	15	5.0	65	6000
718F	3.1	570	15	5.0	65	6000
718R	3.1	570	15	5.0	65	6000
718S	7.5	450	15	11.3	65	6000
719	3.0	600	24	12.0	100	6000
720QX	3.1	570	15	5.0	65	6000
720T	3.1	570	15	5.0	65	6000
720V	3.1	570	15	5.0	65	6000
720X	3.1	570	15	5.0	65	6000
721E	6.5	490	28	10.0	70	3000
721G	6.5	490	28	10.0	70	3000
721K	3.0	600	22	5.0	70	3500

(CONTINUED ON PAGE 152)

**"A HEIN-WERNER
HYDRAULIC JACK
SURE IS SAFE, FAST
and EASY to OPERATE"**



Range from
1½ ton model at
\$3¹⁵
up to 20 ton model
at \$30.00



Model E12.9A

LOOK AHEAD and you'll equip your fleet **NOW**

It's true a driver may go a long time without ever requiring a tire change on the road. But when the "unexpected" happens—YOU and the driver both gain when a Hein-Werner Hydraulic Jack is in the tool kit—ready for instant service.

The ease and dependability of operating a H-W Jack cuts down on "lost time" required to make tire changes on the road. And the ease and safety of operation sure make a hit with the man who pumps the jack.

All H-W Jacks are factory tested at 1½ times rated capacity. Each has leak-proof hydraulic unit, and large sled base.

Complete H-W line includes 1½ ton capacity hydraulic jack at only \$3.15 . . . 2 ton model, \$3.55 . . . 3 ton model, \$7.30 . . . 5 ton, \$9.40 . . . 8 ton, \$12.30 . . . 12 ton, \$18.35 . . . 20 ton, \$30.00. (All prices are net, and slightly higher on West Coast).

Hein-Werner also makes Bumper-Lift Hydraulic Jacks for passenger cars, and a full line of Service Jacks of 1¼, 1½, 2, 3 and 4 tons capacity. Also SAFE-T's. (non-adjustable) horses of and 5 10 tons capacity.

For details and latest prices, ask your H-W jobber, or write us
HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER
hydraulic **JACKS**

STARTER TEST SPECIFICATIONS (Continued from Page 150)

UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD		
	Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM
721L	3.0	600	22	5.0	70	3500	724X	3.0	600	22	5.0	70	3500	738	3.0	600	24	12.0	100	6000
721M	3.0	600	22	5.0	70	3500	724Y	6.5	490	23	10.0	70	3000	736C	3.1	570	15	5.0	65	6000
721N	6.5	490	28	10.0	70	3000	724Z	3.0	600	22	5.0	70	3500	736G	3.1	570	15	5.0	65	6000
721P	6.5	490	28	10.0	70	3000	725D	3.0	600	16	5.0	60	6000	736N	7.5	450	15	11.3	65	6000
722L	3.0	600	22	5.0	70	3500	725P	6.7	530	16	10.0	70	7000	736U	7.5	450	15	11.3	65	6000
722N	6.5	490	28	10.0	70	3000	727	3.5	500	45	8.0	75	2000	736V	3.1	570	15	5.0	65	6000
722T	3.0	600	22	5.0	70	3500	728	3.0	500	19	5.0	70	3000	736Y	3.1	570	15	5.0	65	6000
722W	3.0	600	22	5.0	70	3500	729L	3.0	600	18	5.0	65	5500	736Z	7.5	450	15	11.3	65	6000
722Y	6.5	490	28	10.0	70	3000	730	3.0	600	24	12.0	100	6000	737	4.8	725	44	12.0	65	4500
724	5.3	670	32	11.2	80	4500	733	3.0	600	24	12.0	100	6000	737B	3.1	570	15	5.0	65	6000
724C	3.0	600	22	5.0	70	3500	734K	3.4	525	12	5.0	65	5000	737D	3.1	570	15	5.0	65	6000
724D	3.0	600	22	5.0	70	3500	734T	3.4	525	12	5.0	65	5000	737E	3.1	570	15	5.0	65	6000
724L	3.0	600	22	5.0	70	3500	734X	3.4	525	12	5.0	65	5000	737F	7.5	450	15	11.3	65	6000
724Q	3.0	600	22	5.0	70	3500	734Y	3.3	525	12	5.0	65	5000	737G	3.1	570	15	5.0	65	6000
724R	3.0	600	22	5.0	70	3500	734Z	3.3	525	12	5.0	65	5000	737H	7.5	450	15	11.3	65	6000
724U	3.0	600	22	5.0	70	3500	735	3.0	500	25	22.0	85	6000	737P	7.5	450	15	11.3	65	6000

Quiz FOR FLEET OPERATORS ON AIR BRAKE EQUIPMENT

Ask yourself these questions before you buy

	Midland Power Brakes	Other Makes
Does it have the extra reserve air capacity supplied by a 7.3 cu. ft. compressor?	YES	?
Does it offer the perfect control of a fully compensating foot control valve?	YES	?
Does it provide super power with a choice of cylinders or diaphragms?	YES	?
Are the units interchangeable in fleet operation?	YES	?
Is it backed by a "Factory Rebuilt Exchange Plan"?	YES	?
Is it available in complete kits containing every needed part?	YES	?
Is it adopted as standard factory equipment by leading Truck, Trailer and Bus Manufacturers?	YES	?

Those who KNOW Power Brakes, Choose Midland!
For complete information and prices, see your nearby
Midland distributor or write us direct.

THE MIDLAND STEEL PRODUCTS CO.

10605 MADISON AVE., CLEVELAND, OHIO • EXPORT DEPT.—38 PEARL ST. NEW YORK CITY



MIDLAND

(CHRISTENSEN)

Power Brakes



738	3.0	600	24	12.0	100	6000
736C	3.1	570	15	5.0	65	6000
736G	3.1	570	15	5.0	65	6000
736N	7.5	450	15	11.3	65	6000
736U	7.5	450	15	11.3	65	6000
736V	3.1	570	15	5.0	65	6000
736Y	3.1	570	15	5.0	65	6000
736Z	7.5	450	15	11.3	65	6000
737	4.8	725	44	12.0	65	4500
737B	3.1	570	15	5.0	65	6000
737D	3.1	570	15	5.0	65	6000
737E	3.1	570	15	5.0	65	6000
737F	7.5	450	15	11.3	65	6000
737G	3.1	570	15	5.0	65	6000
737H	7.5	450	15	11.3	65	6000
737P	7.5	450	15	11.3	65	6000
737R	3.1	570	15	5.0	65	6000
737T	3.1	570	15	5.0	65	6000
737W	7.5	450	15	11.3	65	6000
737Y	3.1	570	15	5.0	65	6000
737Z	3.1	570	15	5.0	65	6000
738	3.0	500	25	22.0	85	6000
738C	3.4	525	12	5.0	65	5000
738G	3.4	525	12	5.0	65	5000
738N	3.4	525	12	5.0	65	5000
739	3.0	500	25	22.0	85	6000
739A	3.4	525	12	5.0	65	5000
739E	3.3	525	12	5.0	65	5000
739H	3.4	525	12	5.0	65	5000
740	3.0	500	25	22.0	85	6000
740K	3.1	570	15	5.0	65	6000
740L	7.5	450	15	11.3	65	6000
740M	3.1	570	15	5.0	65	6000
740N	7.5	450	15	11.3	65	6000
741	3.0	500	25	22.0	85	6000
742	3.0	500	25	22.0	85	6000
743	3.0	600	24	12.0	100	6000
743A	7.5	450	15	11.3	65	6000
751	3.0	500	25	22.0	85	6000
752	3.0	600	24	12.0	100	6000
753	4.8	725	44	12.0	65	4500
754	3.0	600	24	12.0	100	6000
755	4.8	725	44	12.0	65	4500
756	5.0	700	55	11.2	75	2250
759	4.8	725	44	12.0	65	4500
762	3.0	500	25	22.0	85	6000
763	3.0	500	25	22.0	85	6000
767	3.0	600	24	12.0	100	6000
768	3.0	500	25	22.0	85	6000
769	3.5	500	45	8.0	75	2000
772	3.0	500	25	22.0	85	6000
773	3.0	600	24	12.0	100	6000
774	3.0	600	35	5.7	70	2200
777	3.0	500	25	22.0	85	6000
780	3.0	600	24	12.0	100	6000
781	5.3	670	32	11.2	80	4500
786	3.0	500	25	22.0	85	6000
790	5.0	700	51	11.2	75	2400
793	4.8	725	44	12.0	65	4500
796	3.0	500	25	22.0	85	6000
805	4.3	800	60	23.3	90	6800
806	4.3	800	60	23.3	90	6800
807	4.3	800	60	23.3	90	6800
808	4.3	800	60	23.3	90	6800
809	4.3	800	60	23.3	90	6800
813	4.3	800	60	23.3	90	6800
816	4.3	800	60	23.3	90	6800
SM1219	5.3	670	32	11.2	80	4500
SM1307	5.3	670	32	11.2	80	4500
SM1410	3.0	600	15	5.0	65	5500
SM1640	7.5	450	15	11.3	65	6000
SM1646	6.5	480	28	10.0	70	3000
SM1864	4.8	725	44	12.0	65	4500
SM1750	3.0	500	25	22.0	85	6000
SM1751	3.0	500	25	22.0	85	6000
SM1768	3.0	500	25	22.0	85	6000
SM1937	7.5	450	15	11.3	65	6000
1107001	3.3	525	12	5.0	65	5000
1107003	3.3	525	12	5.0	65	5000
1107006	3.3	525	12	5.0	65	5000
1107009	3.3	525	12	5.0	65	5000
1107010	3.3	525	12	5.0	65	5000
1107012	3.3	525	12	5.0	65	5000
1107014	3.4	525	12	5.0	65	5000
1107015	3.4	525	12	5.0	65	5000
1107016	3.4	525	12	5.0	65	5000
1107033	3.4	525	12	5.0	65	5000
1107041	3.4	525	12	5.0	65	5000
1107403	3.1	570	15	5.0	65	6000
1107404	3.1	570	15	5.0	65	6000
1107407	3.1	570	15	5.0	65	6000
1107408	3.1	570	15	5.0	65	6000
1107410	3.1	570	15	5.0	65	6000
1107413	3.1	570	15	5.0	65	6000
1107414	3.1	570	15	5.0	65	6000
1107418	3.1	570	15	5.0	65	6000
1107420	3.1	570	15	5.0	65	6000
1107422	3.1	570	15	5.0	65	6000
1107431	3.1	570	15	5.0	65	6000
1107434	3.1	570	15	5.0	65	6000
1107437	3.1	570	15	5.0	65	6000
1107801	7.5	450	15	11.3	65	6000
1107803	7.5	450	15	11.3	65	6000
1107805	7.5	450	15	11.3	65	6000
1107809	7.5	450	15	11.3	65	6000
1107811	7.5	450	15	11.3	65	6000

(CONTINUED ON PAGE 154)

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

Costs Less per Mile



Why?

Because here's

the fleet battery that's **SPECIALLY ENGINEERED** to the highest standards, to perform its *specific* service. Building a fleet battery calls for more quality, more time, more skill, and more rigid supervision than is required in the building of any other kind of battery!

How?

This battery actually cuts down maintenance costs. Widens the profit span between income and pay out. Puts more dollars in your pocket by wiping more dollars off the expense account. Does a more dependable, more economical job every mile, and then stays on the job many extra miles!

Prove It!

You bet we'll prove it! Not with fancy laboratory tests. We'll prove it to you the hard way. We invite you to give a Bowers "the works" in actual use. We dare you to treat it rougher than you've ever treated any other battery. We defy you to catch it napping or off-guard for split second starting. And we urge you to compare its cost figures with your previous "best record." Then decide for yourself if you can *afford* NOT to standardize with Bowers!

Write Today for Complete Information

BOWERS BATTERY MFG CO., INC.

BOWERS

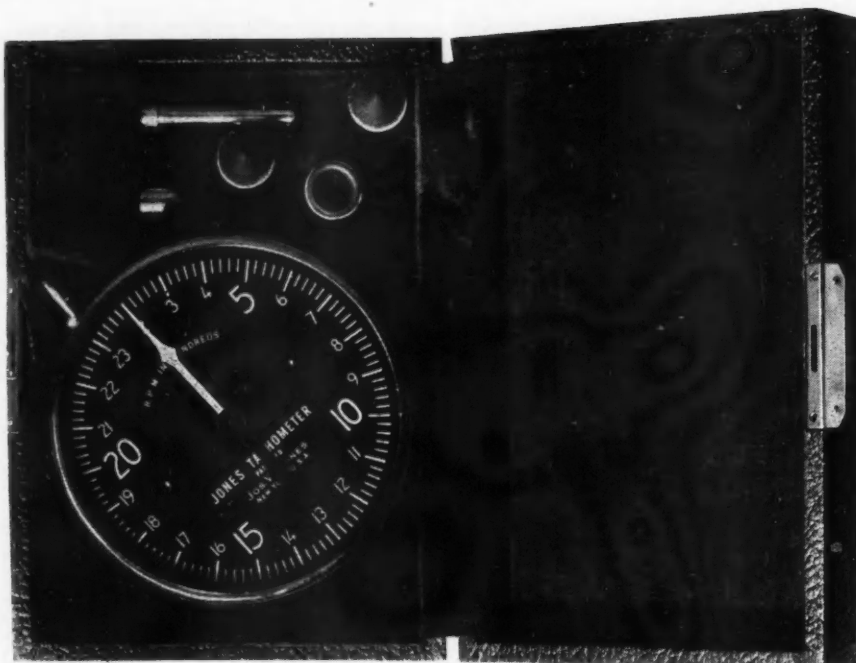


BETTER BUILT BATTERIES

MAIN PLANT, READING, PA. - - CHICAGO PLANT HARVEY, ILL.

STARTER TEST SPECIFICATIONS (Continued from Page 152)

UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD			UNIT MODEL NUMBER	LOCK TEST			NO LOAD		
	Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM		Volts	Amps	Torque	Volts	Amps	RPM
1107813	7.5	450	15	11.3	65	6000	1108206	3.0	600	22	5.0	70	3500	1108877	6.7	530	33	10.0	70	2800
1107816	7.5	450	15	11.3	65	6000	1108401	6.5	490	28	10.0	70	3000	1108701	2.3	570	20	11.6	100	5000
1107826	7.5	450	15	11.3	65	6000	1108402	6.5	480	28	10.0	70	3000	1108702	2.3	570	20	11.6	100	5000
1107906	3.0	600	18	5.0	60	6000	1108404	6.5	480	28	10.0	70	3000	1108703	2.3	570	20	11.6	100	5000
1107915	3.0	600	18	5.0	60	6000	1108405	6.5	490	28	10.0	70	3000	1108704	2.3	570	20	11.6	100	5000
1107916	3.0	600	18	5.0	60	6000	1108451	3.0	600	28	5.0	70	2500	1108705	2.3	570	20	11.6	100	5000
1107918	3.0	600	18	5.0	65	5500	1108452	3.0	600	28	5.0	70	2500	1108706	2.3	570	20	11.6	100	5000
1107920	3.0	600	18	5.0	65	5500	1108453	3.0	600	28	5.0	70	2500	1108707	2.3	570	20	11.6	100	5000
1108102	6.7	530	16	10.0	70	7000	1108454	3.0	600	28	5.0	70	2500	1108709	2.3	570	20	11.6	100	5000
1108103	6.7	530	16	10.0	70	7000	1108455	3.0	600	28	5.0	70	2500	1108715	2.3	570	20	11.6	100	5000
1108104	6.7	530	16	10.0	70	7000	1108529	6.7	530	33	10.0	70	2800	1108724	2.3	570	20	11.6	100	5000
1108107	6.7	530	16	10.0	70	7000	1108531	6.7	530	33	10.0	70	2800	1108900	3.0	500	19	5.0	70	3000
1108111	6.7	530	16	10.0	70	7000	1108533	6.7	530	33	10.0	70	2800	1108907	5.3	670	32	11.2	80	4500
1108201	3.0	600	22	5.0	70	3500	1108534	6.7	530	33	10.0	70	2800	1109100	4.8	725	44	12.0	65	4500
1108202	3.0	600	22	5.0	70	3500	1108651	3.0	600	16	5.0	65	5500	1109103	4.8	725	44	12.0	65	4500
1108205	3.0	800	22	5.0	70	3500	1108676	7.5	450	15	11.3	65	6000	1109104	4.8	725	44	12.0	65	4500



Know Your Engine R. P. M.

For scientific maintenance you need an accurate portable tachometer. The Jones Portable Tachometer facilitates accurate engine readings, either from the crankshaft end, from the end of the generator, or any revolving shaft.

Jones Tachometer indicates instantaneously . . . without use of a stop watch . . . the engine r. p. m.

- For adjusting governors without taking the truck off the road.
- For engine tune-up and carburetor adjustment.
- For trouble shooting.
- For economical operation and maintenance.

Used by world's largest operators, including Standard Oil Company of La., N. Y., Shell Petroleum Co., Atlantic Refining Co., Tidewater Oil Co., Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy, International Harvester.

For complete information, write TODAY

JONES-MOTROLA SALES CO.

432 Fairfield Avenue

STAMFORD, CONN.

Lamp Standards Postponed

On January 28, the Safety Equipment Manufacturers' Association reported the current impracticability of obtaining stranded copper wire and amber lenses conforming to Commercial Standards CS80-41 to CS86-41, inclusive, and requested, therefore, that the effective date on these Standards be postponed.

The SEMA is now working in cooperation with the Electrical Testing Laboratories, the Society of Automotive Engineers, the wire manufacturers, and the lens manufacturers, in an effort to obtain material which will conform respectively with the S.A.E. specifications for wire, and with the commercial standards' limits for amber glass, and it is their belief that his can be accomplished prior to July 1, 1941.

Agreeable to the above request and with the approval of the Standing Committee, the effective date for new production of the corresponding items of Lamps and Signal Equipment according to Commercial Standards CS80-41 to CS86-41, inclusive, is hereby extended from Jan. 1, 1941, to July 1, 1941.

Car Wood Truck Equipment Folders

Car Wood Industries, Inc., Detroit, Mich., is now distributing bulletins Nos. 2 and 11. The first one illustrates and describes cam and roller hoists for all sizes of trucks, trailers and six-wheelers and the second one gives the same information on repair towers such as are used by public utilities.



A load of matches coming 'round the mountain on a Cummins-powered International Truck of the Ohio Match Co.

CHEVROLET TRUCKS



Chevrolet means economy — and that means more profits

Chevrolet economy is a matter of record, proved time after time by the cost-sheets of hundreds of firms.

Still better proof is the fact that, year after year, Chevrolet is awarded first place in truck sales by the nation's business men—men whose object is to make their businesses increasingly profitable, men who know that it's good business to buy the best equipment obtainable.

Chevrolet is America's truck leader—by the verdict of America's business leaders.

CHEVROLET MOTOR DIVISION, General Motors Sales Corporation
DETROIT, MICHIGAN

Inspect these
NEW 1941 FEATURES

★ 90-HORSEPOWER VALVE-IN-HEAD ENGINE . . . 174 FOOT-POUNDS OF TORQUE ★
NEW RECIRCULATING BALL-BEARING STEERING GEAR ★
NEW, MORE COMFORTABLE DRIVER'S COMPARTMENT.

60 MODELS
ON NINE LONGER WHEEL-BASES . . . A COMPLETE LINE FOR ALL LINES OF BUSINESS

OUT-PULL . . . OUT-VALUE . . . OUT-SELL

LEGISLATIVE LOOKOUT

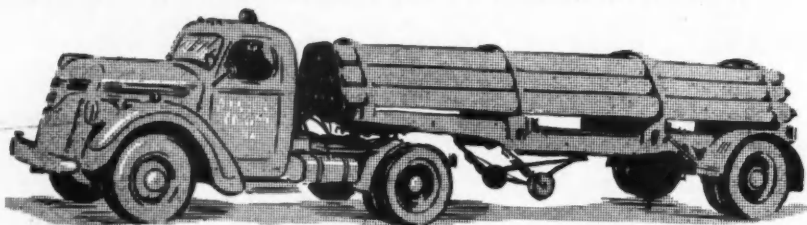
Tennessee, Texas, North Dakota and Indiana Revise Gross Weights While 35 States Continue to Weigh Highway Bills

THE legislatures of Tennessee, Texas, North Dakota and Indiana have enacted legislation which materially raises the prevailing

gross allowable weights in their respective states. In each case the bills have been approved by the Governors and now stand as law.



**OR
STRAIGHTAWAY-**



**IT'S A-S-F.
ALL THE
WAY**



**A-S-F FIFTH
WHEEL**

AMERICAN STEEL FOUNDRIES

EAST CHICAGO . . . INDIANA

The Tennessee bill, reported in last month's issue, raises the gross weight in that state from 24,000 to 30,000 lb. subject to an axle limitation of 16,000 lb.

In Texas, H.19, the "scientific" weight bill, provides a gross vehicle weight of 38,000 lb. and automatically repeals the existing 7000 lb. load limit.

A compromise bill in North Dakota, full details of which are not available, was put through at the last moment increasing the gross weight from 35,000 to 40,000 lb.

A series of bills in Indiana resulted in the repeal of the old tire and weight taxes along with the 40,000 lb. gross weight limit and the substitution of a formula $[700 (L \text{ plus } 40)]$ which permits possible gross weights up to 56,000 lb. At the same time substantial increases have been made in the registration rates for trucks, but it is estimated the amounts will be slightly under the totals collected under the old laws.

Practical interpretations of each of these bills appear in the "State Size and Weight" tables on pages 24 and 25 of this issue.

Meanwhile 34 (of an original 42) legislatures continue in session. Several minor measures have been enacted in the various states, an analysis of which appears below, together with a number of bills introduced in the legislatures since the last issue.

The following bills have passed both houses and have been approved by the Governor:

DELAWARE

H.16 repeals prohibition against trailer having carrying capacity of more than 10,000 lb.

S.181 provides a uniform system of hand signals for starting, stopping and turning all motor vehicles.

S.182 requires reporting of accidents in which damage is \$25 or more.

S.183 increases maximum height from 12 ft. 2 in. to 12 ft. 6 in.

INDIANA

S.57 prohibits Governor or other official from extending vehicle registration date.

S.108 requires payment of personal property taxes before motor vehicle registration.

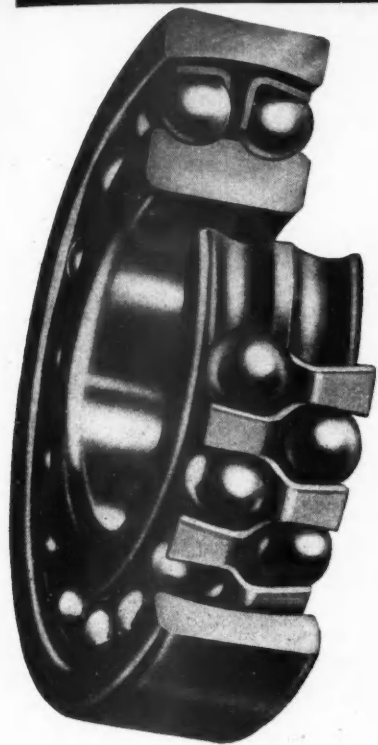
H.336 adds vehicles carrying explosives to those authorized to carry red light visible from directly in front.

H.246 extends operators' and chauffeurs' license expiration date to March 1.

H.144 classifies household movers as commercial vehicles.

(TURN TO PAGE 158, PLEASE)

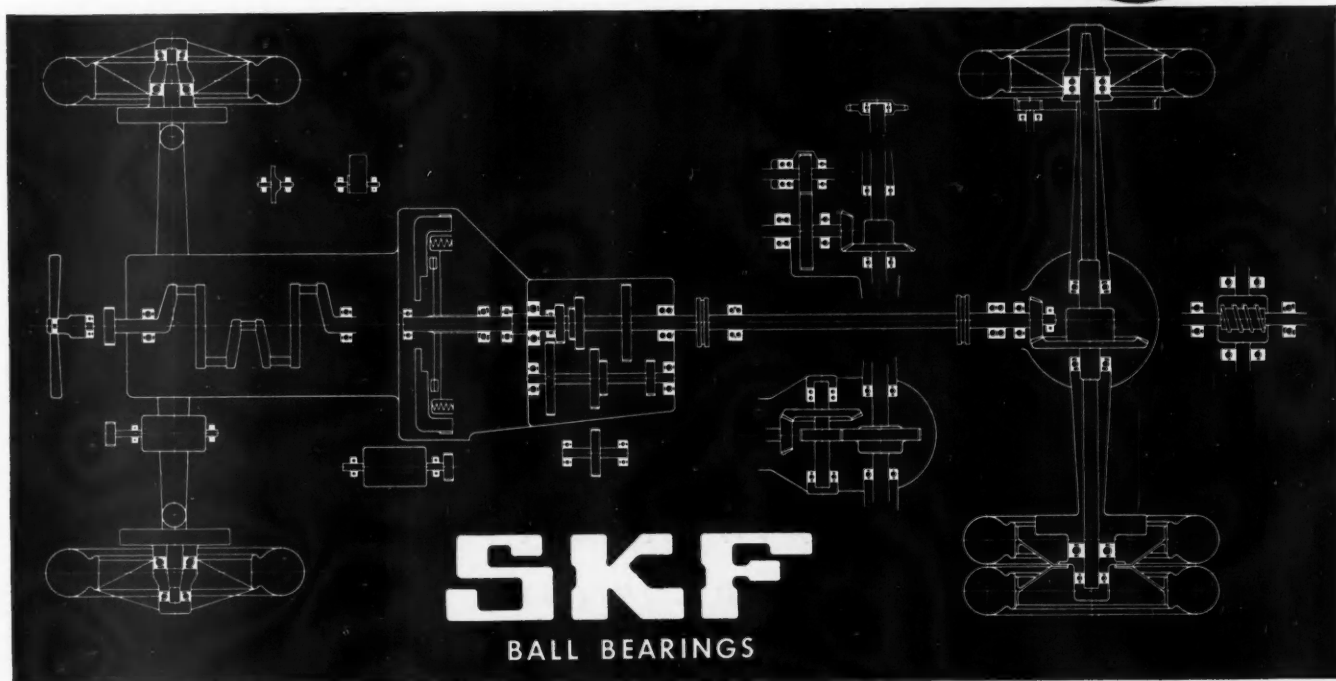
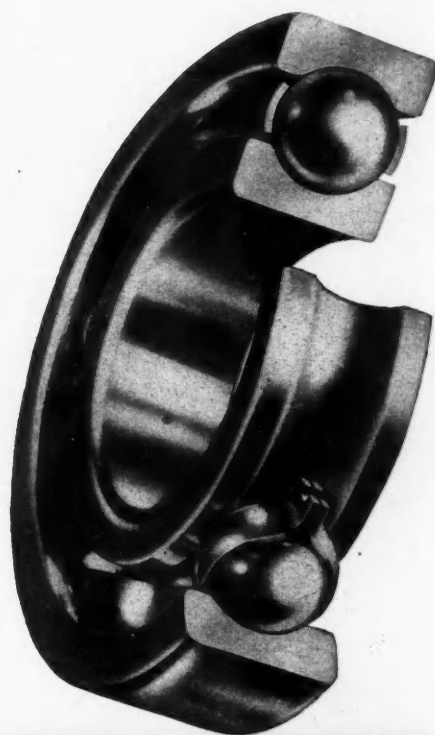
FOR EVERY BALL BEARING REPLACEMENT LOCATION: *Standards AND Specials*



Scattered throughout the country are more than 750 SKF Distributors. One of them is near you, waiting to serve you. From more than 6000 types and sizes of SKF's, he can put his fingers on just the bearing you need . . . a bearing that's synonymous with "low maintenance costs and dependable performance." Why not phone him . . . NOW?

SKF INDUSTRIES, INC.
Front St. & Erie Ave., Phila., Pa.

4758



LEGISLATIVE LOOKOUT

(CONTINUED FROM PAGE 156)

mon carriers and requires filing of rates.

S.98 permits public transportation companies to use police radio receivers in emergency maintenance trucks.

H.294 allows windshield signs up to 4 in. square.

H.J.R.15 establishes a 21-member traffic study commission which is to report its recommendations before Nov. 15, 1942.

H.326 requires rate fixing for each class of carriers.

IOWA

H.6 eliminates the grace period for payment of taxes by certificated carriers.

KANSAS

H.164 permits carrier to furnish bond in lieu of deposit for ton-mile tax.

S.16 refunds fees to motor carriers who have ceased to operate.

H.165 provides action for collection of ton-mileage taxes must be commenced within 5 years.

MAINE

H.312 reduces registration fee for trucks between 2 and 2½ ton capacity.

MARYLAND

S.421 would limit axle load to 600 lb. per inch of tire width or 24,000 lb. per axle; axles spaced less than 50 in. apart limited to 20,000 lb.; provides formula 750 (L plus 40).

MASSACHUSETTS

H.150 increases height of "heavy duty platform trailers."

MINNESOTA

H.53 gives owner a chance to apply to increase authorized gross weight to that or greater than that which the owner has been convicted of exceeding by paying the difference in charges rather than entire new license.

NEW YORK

H.378 provides requirements for motor vehicle reflectors shall be applicable both day and night.

NORTH CAROLINA

H.314 allows non-resident automobiles to be operated for 30 days.

NORTH DAKOTA

S.50 continues the additional 1c. gas tax.
S.40 re-enacts 2 per cent sales tax.

OREGON

S.129 prohibits use of flashing stop lights on motor vehicles.

S.128 permits removal of motor vehicle sidelights for daylight operation.

S.174 requires directional signals.

H.154 increases gross weight classification for truck registration from 4,000 to 4,500 lb.

H.98 provides 50c. additional registration fee for hospitalization of injured indigents.

S.199 limits length to 35 ft.

S. CAROLINA

H.425 levies a tax of 10 per cent on retail list price of all motor vehicles tires and tubes to be used for increasing teachers' salaries.

SOUTH DAKOTA

H.74 permits Public Utilities Commission to grant over-weight permits for hauling one block of granite.

S.162 amends motor vehicle license fees.

H.275 authorizes Public Utilities Commission to regulate size, weight, and load of motor vehicles in communities where railroads have been abandoned.

S.363 empowers the state treasurer to stop and inspect trucks transporting motor fuel imported into the state.

S.77 provides 2 per cent gross sales tax.

S.113 requires drivers of vehicles carrying livestock to exhibit a written permit to peace officers on demand.

WASHINGTON

S.98 prohibits constables in Class "A" counties from making arrests for traffic violations, without a warrant.

WEST VIRGINIA

H.211 extends the emergency gasoline tax two more years.

(TURN TO PAGE 160, PLEASE)



SCIENTISTS REVEAL MILLION & A HALF SPRINGS IN SENSATIONAL HAIRFLEX CUSHION!

ARMOUR'S chemical engineers recently revealed that there were **1,420,000 individual curled hair springs** in 1 standard HAIRFLEX truck seat pad approximately 53" x 23" x 1".

Springs mean comfort. More springs—more comfort. That's why you'll find a new **comfort ride** in this HAIRFLEX pad. The 1½ million curled hair springs are bonded each to the other by buoyant latex rubber to make a thick non-shifting, non-matting, non-lumping seat pad.

3 Reasons Why Hairflex Belongs in Your Fleet

- Safety** . . . Drivers concentrate on traffic . . . no seat worries.
- Comfort** . . . Contour-fitting HAIRFLEX relaxes drivers . . . reduces fatigue.
- Economy** . . . Less truck idle time for seat repair . . . more earning hours.

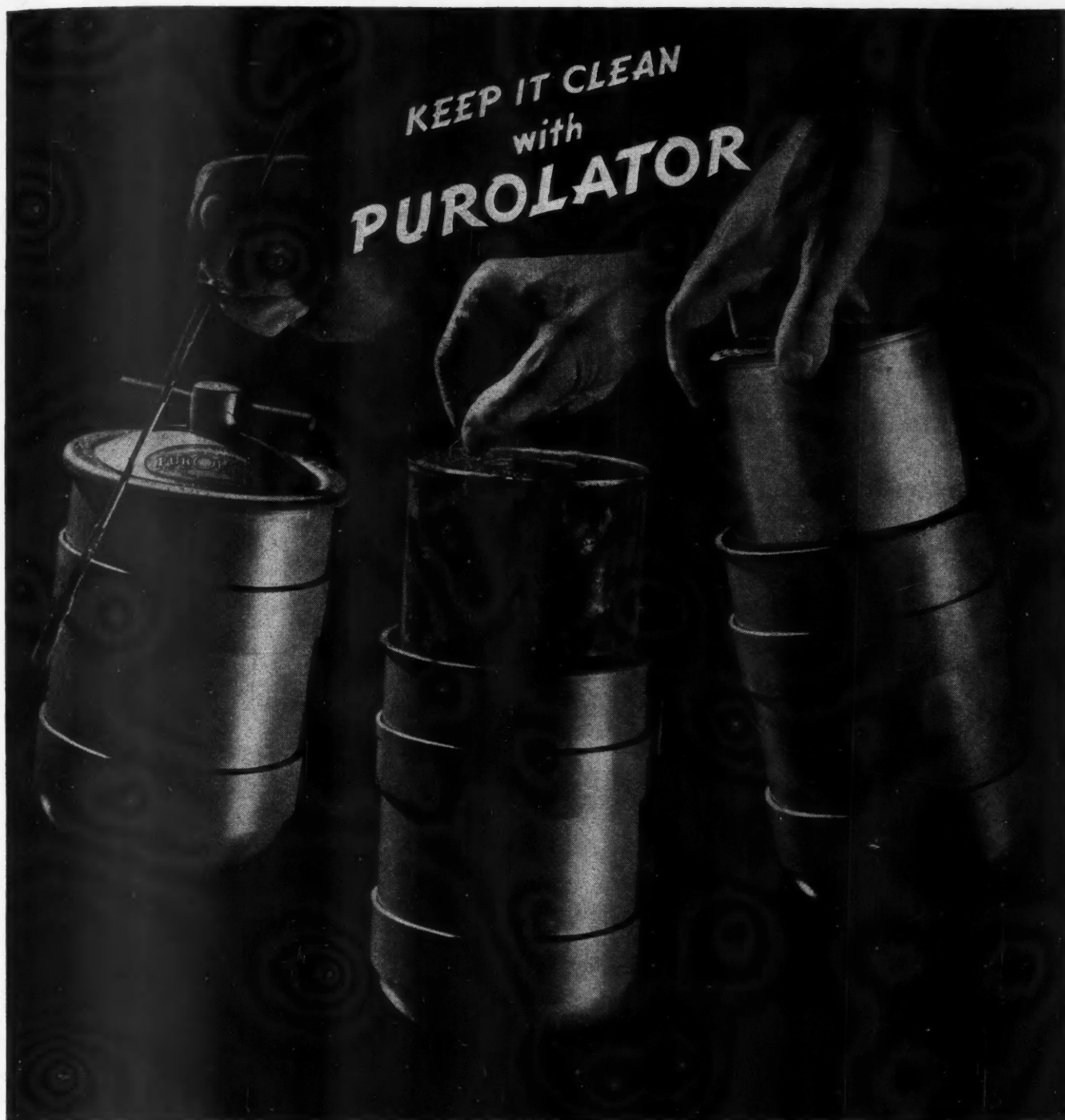
A MILLION drivers of fleet trucks and passenger cars feel the thrill of a **comfort ride** on Armour's HAIRFLEX every day. Feel for yourself how a million and a half curled hairs over a spring unit make your truck driving a new pleasure. Specify Armour's HAIRFLEX in your next order.

When You Buy

Specify

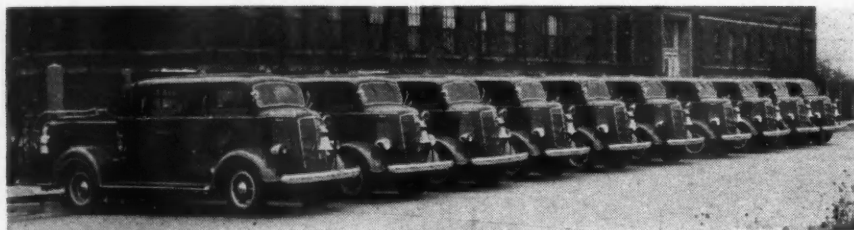
ARMOUR'S HAIRFLEX

ARMOUR AND COMPANY
CURLED HAIR DIVISION
1355 W. 31st STREET CHICAGO, ILLINOIS



AS EASY AS IT LOOKS—AND VITALLY IMPORTANT!

You'd expect plenty of trouble if anyone put dirty, gritty oil in your crankcase. But the best oil soon gets dirty in actual service—unless the oil filter is on the job, trapping the dirt in the filter element. ☆ ☆ Watch the oil on the dip-stick. When it shows dirty, replace the filter element. It's like putting a new blade in your razor. Of course, be sure you get genuine Purolator elements. The cost is small—\$1 and up. ☆ ☆ Insist on Purolator—standard equipment on the large majority of filter-equipped engines—both gasoline and Diesel. Purolator Products, Inc., Newark, New Jersey . . . *founders and leaders of the oil filter industry.*



The latest in fire fighting equipment is typified by these Mack squad cars recently added to Chicago's fire department. The crew rides protected inside the spacious cab, pumps handle 1200 gal. a minute at 130 lb. pressure and there is an unusually complete complement of emergency tools for special work.

FIRST LINE OF DEFENSE

Your first line of defense against excessive operating cost must be strong and impregnable.

In the constant war against those forces which make operating cost go up out of reason, thousands of fleet operators have found Hoof Governors to be their most dependable first line of defense.

The importance of controlled speed cannot be over estimated—and the importance of using a governor responsive in action, accurate in control, and providing full power, cannot be over stressed.

The features of the Hoof Governor are familiar to most . . . but NEW outstanding features have been added, making it a finer governor than ever before. Smaller in size and more compact, conforming to general contour of carburetor assembly, there is no interference with rods, levers or lines; simplified with spark advance built right into the governor, there are no extra parts or fittings to contend with.



TRY THIS NEW HOOF GOVERNOR . . . SPECIFY "HOOF" WHEN ORDERING NEW EQUIPMENT



The machine shop . . . accurate machine work on individual governor parts assures accuracy and consistency in Hoof Governor performance.

SEND FOR NEW GOVERNOR MANUAL F-241

HOOF PRODUCTS CO., . . . 6543 S. Laramie Ave., CHICAGO, ILL.

Makers of the FAMOUS HOOF CANTILEVER GOVERNORS.

LEGISLATIVE LOOKOUT

(CONTINUED FROM PAGE 158)

The following bills have been introduced since our last issue. None had been passed at the time this issue went to press.

FEDERAL

SJR.46 (joint resolution) would provide for postponement of certain orders relative tariffs of freight forwarders.

S.974 would amend transportation act of 1940 by amending provisions of Section 322 of Part 11 of the Act. (Details not available).

S.975 would amend Part 11 of Interstate Commerce Act, Motor Carrier Act. (Details not available).

ARIZONA

H.100 would increase truck and bus speed limit from 45 to 55.

H.69 would impose 5c. tax on diesel oil.

S.166 would provide for issuance of plates to all common carriers by Motor Vehicle Department.

S.110 would provide 35 ft. length for single unit and 65 ft. for combination.

H.214 would require trucks and buses to install and maintain "safety passing" lights.

ARKANSAS

H.641 would provide license fee for vehicles propelled by any fuel other than gasoline.

Legislature adjourned March 13.

CALIFORNIA

H.440 would provide that after January 1, 1942, no new truck, trailer or semi-trailer shall be sold, registered or operated unless equipped with rear bumpers not less than 18 nor more than 24 in. from the ground.

(TURN TO PAGE 162, PLEASE)

WHAT-THE-HELL DEPT.

Ill.—S.204 would require trucks to have series of rear lights showing speed in excess of 20, 30 and 50 m.p.h.

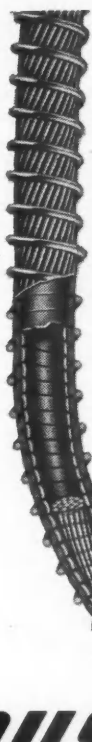
Iowa—H.452 would provide for vehicle registration cards to be displayed above rear-view mirror with top half showing at all times.

N. Hamp. — H.328 would make it mandatory for auto drivers to take the keys from ignition switch when they leave their cars parked.

N. Car.—S.294 would fix speed limit of 20 m.p.h. for vehicles passing cemeteries in towns over 15,000.

Oregon—S.258 would prohibit throwing any missile at a common carrier or passenger vehicle.

S. Car.—H.370 would prohibit towing of automobiles except by garage men.



Adaptable

The moving part of a PUSH-PULL CONTROL operates—in a rugged flexible conduit—in a bath of lubricant sealed so that lubricant can't get out nor can water or grit enter.

THE many characteristics of PUSH-PULL CONTROLS for Passenger Cars, Motor Trucks, Buses, Tractors and Material Handling equipment can be summed up by that one word. They are adaptable—used with equal efficiency to control the operation of many different parts—easily installed without disturbing chassis design—operate positively, quietly, and easily regardless of temperature or climate.

Glad to discuss with you how PUSH-PULL CONTROLS can be adapted to any or all of your models.

AMERICAN CABLE DIVISION

6-235 General Motors Building, Detroit, Michigan
San Francisco: 630 Third Street

PUSH-PULL AUTOMOTIVE CONTROLS

"Adaptable"

Certainly that is one of the many lovable characteristics of Spaniels. They make themselves completely happy—wherever they may be.



AMERICAN CHAIN & CABLE COMPANY, Inc.

LEGISLATIVE LOOKOUT

(Continued from Page 160)

S.1205 would provide that laws regulating size and weight shall not apply to vehicles owned or operated by United States in connection with military or naval operations or to vehicles engaged exclusively in transportation for War or Navy Departments in connection with military or naval operations if drivers have specified credentials.

H.1268 would establish new gross weight formula of 800 (L plus 40) as recommended by Legislative Interim Committee

and increase axle weight from 17,000 to 18,000 lb.; number of axles to be used as basis for registration.

H.1320 would permit any common carrier to establish through routes and joint rates between any and all points served.

H.2119 would require Railroad Commission to encourage coordination of existing transportation facilities; empowers Commission to establish joint rates between highway common carriers and other types of common carriers.

H.1271 would provide maximum 65 mile speed limit.

H.1268 would increase axle weight from 17,000 to 18,000 lb. Reduces wheel weight from 10,000 to 9,500 lb.; gross weight based on formula.

H.2103 would stipulate that local authorities cannot license and regulate operation of vehicles for hire "when such motor vehicle carrier does not maintain office, terminal, or warehouse facilities in such city, town, or other municipality."

H.2357 would prohibit sale of any vehicle with unsafe tires or where tires are in such a worn or defective condition as to make use thereof dangerous; prohibits repairing or retreading of tires so weakened by wear, age, or deterioration as to make use dangerous.

H.2268 would amend provisions relative to enforcement of hours of service; requires driver's log.

COLORADO

S.530 would provide for inspection and regulation of weighing and measuring devices.

CONNECTICUT

S.2478 and H.1719 would provide for regulation of household movers in towns over 10,000 by Public Utilities Commission.

H.2401 and S.1033 would provide for suspension of license and registration when judgment remains unpaid for 60 days.

S.2567 and H.1808 would abolish semi-annual automobile inspection.

S.812 and H.2180 would increase length for vehicles transporting motor vehicles from 40 to 45 ft.

DELAWARE

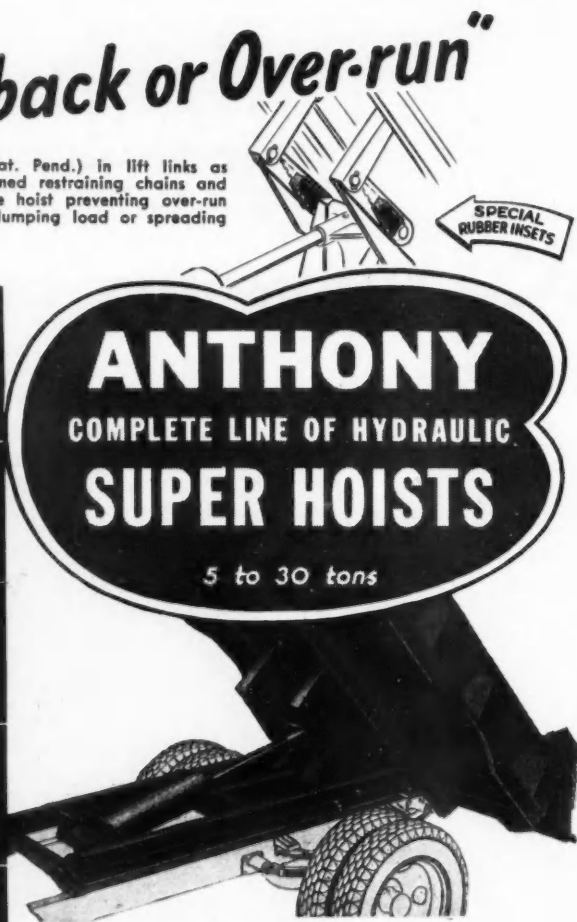
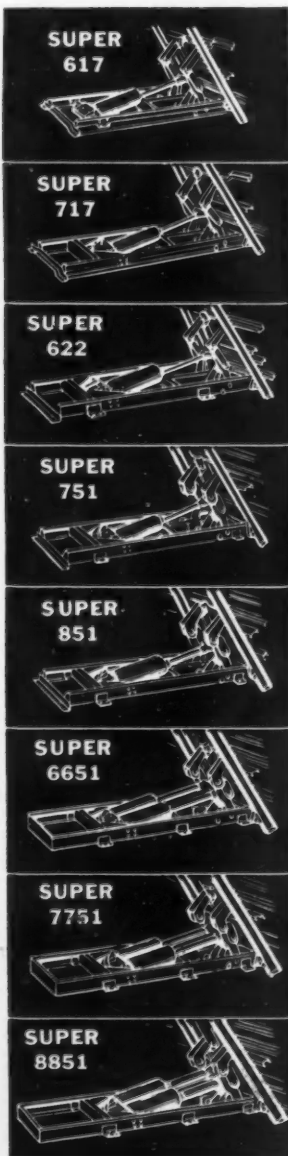
S.120 would provide 55 mile speed limit on dual highways and 50 mile limit on other highways.

S.119 would increase motor vehicle height to 12½ ft., increases length for single unit to 35 ft., and reduces length of combination from 60 to 50 ft.; vehicles with solid tires limited to 22,000 lb.; 4-wheeled vehicles, 30,000 lb.; 6-wheeled vehicles, 40,000 lb.; tractors, semi-trailers, and other combinations limited by formula

(TURN TO PAGE 164, PLEASE)

"No Kick-back or Over-run"

Special rubber insets (Pat. Pend.) in lift links as shown replace old fashioned restraining chains and springs. They cushion the hoist preventing over-run and "kick back" when dumping load or spreading gravel.



Extra Features — Extra Value!

These outstanding features are found only in Anthony Super Hydraulic Hoists . . . Lowest Loading Height . . . Push-Pull Dash Control . . . Double Arm "Power Speed" Lift . . . Rubber Cushioned Discharge (pat. pend.) . . . Arms Lift Vertically to Load . . . Formed Steel Lift Members . . . Telescopic Tipping and subframe . . . Full Tire and Dumping Clearance . . . Pipe-less Hydraulic Hoist.

ANTHONY COMPANY
STREATOR, ILLINOIS



Something new in the meat packing business is frequent fresh meat deliveries in small lots to small dealers. This Dodge ice-refrigerated job makes such a plan feasible for Northern Packing Co. at Grand Forks, N.D.

● Colletti has six Utility units like this, hauling 58,000 lbs. of gross load, 2400 miles round-trip over the punishing grades of Highway 99 between Los Angeles and Seattle. COR-TEN construction keeps them rolling.



IN UTILITY TRAILERS, TOO . . .

COR-TEN in stress-carrying members keeps bigger payloads rolling

“UNLESS otherwise specified U·S·S COR-TEN is standard construction for body framing and all stress-carrying members,” says H. C. Bennett, Utility’s General Manager.

“In the more than 300 COR-TEN steel bodies now in highly successful operation, weight saving by the use of COR-TEN has enabled us to produce equipment that is both lighter and stronger. Because COR-TEN has tremendous strength and elasticity which greatly increases resistance to ‘metal fatigue,’ such construction insures long life and uninterrupted service. We have found these COR-

TEN bodies operate economically, free from the need of repair far longer than bodies of ordinary construction.”

Does lightweight construction with COR-TEN stand up? Listen. Do you know what racks the life out of heavy-duty equipment like this? Vibration and twisting stresses, of course. COR-TEN has an amazing ability to absorb them. For in addition to its high yield strength, COR-TEN has 66.6% greater resistance to fatigue than plain structural steel. Its endurance limit is more than twice that of non-ferrous “light” metals. That’s why COR-TEN imparts

a lasting ruggedness and extra stamina that keeps hard-working equipment on the road.

You don’t have to pay a premium for the extra advantages that COR-TEN construction offers. When used correctly, not just as a substitute for plain steel but as an integral factor in lightweight design, COR-TEN will cut hundreds of pounds from trucks, trailers and buses, with little or no increase in cost and without the sacrifice of a single advantage previously enjoyed.

We’ll be glad to show you how to apply U·S·S COR-TEN most economically to your designs.

U·S·S HIGH TENSILE STEELS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

United States Steel Export Company, *New York*

Scully Steel Products Company, *Chicago, Warehouse Distributors*



UNITED STATES STEEL

LEGISLATIVE LOOKOUT

(Continued from Page 162)

750 (L plus 40) if length over 18 ft., and 650 (L plus 40) if length 18 ft. or less.

S.184 would stipulate vehicles over 80 in. wide to carry two clearance lamps on each side.

H.349 would provide for physical examination of chauffeurs.

GEORGIA

H.549, all tires and tubes shipped into state to have date of manufacture inscribed thereon.

Legislature adjourned March 22.

IDAHO

H.252 would provide Uniform Motor Vehicle Code, with modifications. Requires garages to report vehicles showing evidence of having been in accident; prescribes 50 mile speed limit; requires mechanical directional signal when vehicles is so constructed or loaded that hand signal would not be visible; clearance light requirements in accordance with I.C.C. regulations; requires dimming of headlights within 500 ft. of oncoming vehicles; ve-

hicles carrying explosives to be so marked; authorizes State Police to stop vehicles for inspection at any time; provides for at least one and not more than two inspections annually at state operated or officially designated inspection stations; provides height of 14 ft., 35 ft. length for single vehicle, 45 ft. for tractor-semi-trailer and 65 ft. for other combinations.

H.133 would require carriers to post \$1,000 bond for liability and property damage.

S.147 would repeal reciprocity provisions and require passenger cars to register within 48 hours after entering state.

S.158 would prohibit carrying over 20 gallons of gasoline until state tax is paid thereon.

H.314 defines "auto transportation company," common, contract and private carriers, requires permits for operation from Public Utilities Commission; require public liability insurance and \$1,000 cargo bonds.

H.352 would impose 5c. tax on fuel other than gasoline.

Legislature adjourned March 8.

ILLINOIS

S.157 would license itinerant merchants under control of Department of Public Works.

INDIANA

S.233 would limit gross weight of vehicles transporting petroleum products to 24,000 lb.

H.508 would provide new schedule of truck license fees graduated from \$8 for truck with ½ ton capacity or less (now \$6), to \$250 if capacity 7½ tons (now \$125), and repeals the weight tax.

H.546 would prohibit trucks between 6 p. m. Saturday and midnight Sunday.

H.508 would repeal the tire tax and fix higher schedule of license fees.

S.305 would provide registration fees for passenger cars of 1% of delivered price for new cars, ¾% if one year old, .65% if two years old, .55% if three years old, and .20% for cars older than four years.

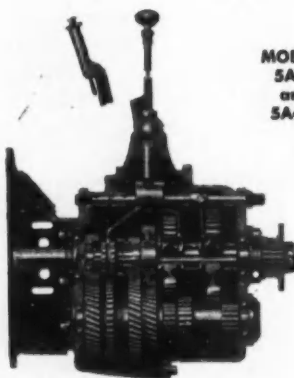
IOWA

H.296 would provide for half-year registration and monthly periodic reductions;

(TURN TO PAGE 166, PLEASE)



Specify **FULLER** Transmissions



MODELS
SA43
and
SA430



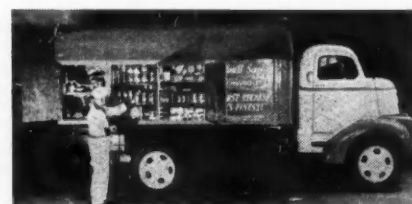
Many a truck operator today is driving his equipment to the very limit of its capacity.

Under such conditions, the extra durability of FULLER Transmissions is doubly valuable, because it means more hauling, and less overhauling.

Every gear, every shaft, every bearing in FULLER Transmissions has been engineered for maximum strength and serviceability. That's why it pays to specify FULLER's.

FULLER MFG. CO. Kalamazoo, Mich.

When writing to advertisers please mention Commercial Car Journal



Chevrolet has nine of these rolling used car reconditioning shops working throughout the country. Each is manned by a competent service expert, carries a full complement of shop equipment and a complete stock of supplies and materials necessary for doing the job in the most efficient way.

COMMERCIAL CAR JOURNAL
APRIL, 1941



Your Fleet Advertises Your Business—Dress It Up

When your fleet goes out on its daily runs, don't forget that it advertises your name to your prospects and customers. If it's good-looking, it's the best kind of promotion. But if it's shabby, it leaves bad impressions of your service and the men behind it.

Fleet owners who are careless about the looks of their fleet may be judged careless about the efficiency and dependability of

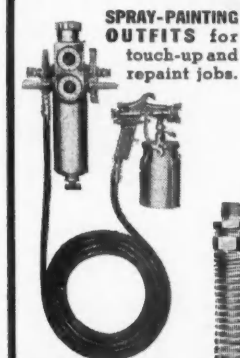
their service. Don't let that happen to you!

Keep your fleet good-looking by a regular program of painting and touch-up. Do it faster, better and at less cost with the same DeVilbiss Equipment that produces so many new car, truck, and bus finishes. Check into it now. Call your local jobber.

THE DEVILBISS COMPANY • TOLEDO, OHIO

Canadian Plant: Windsor, Ontario

DEVILBISS SPRAY SYSTEMS



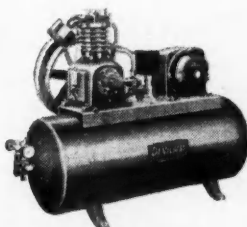
SPRAY-PAINTING OUTFITS for touch-up and repaint jobs.



HOSE FOR ALL USES—Air, oil, water, welding, car heater.



HOSE CONNECTIONS—Permanent or quick detachable types.



AIR COMPRESSORS—For every requirement.



OIL GUNS for high speed chassis lubrication. Spray or stream types.

AIR DUSTING GUNS for removing dust, water, metal chips.



SPRAY BOOTHS—Remove dust, spray vapors. Improve finishing, and shop conditions.

LEGISLATIVE LOOKOUT

(Continued from Page 164)

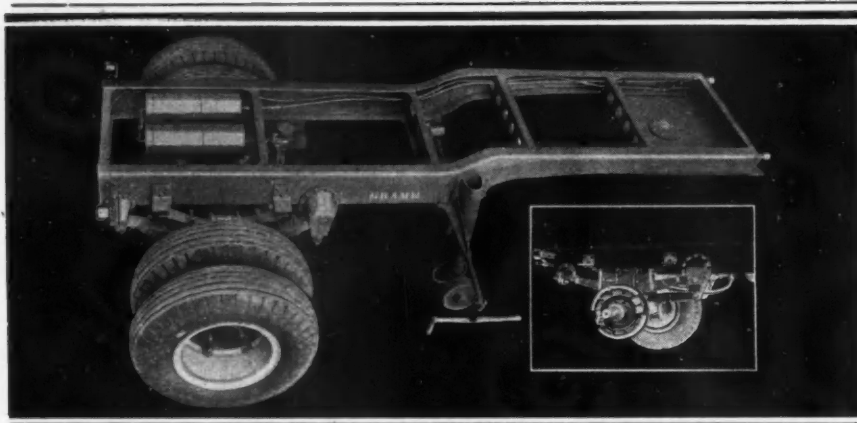
permits increase of gross load by paying difference between gross load classification for remainder of registration period.

H.338 would provide for a certificate of title for all motor vehicles.

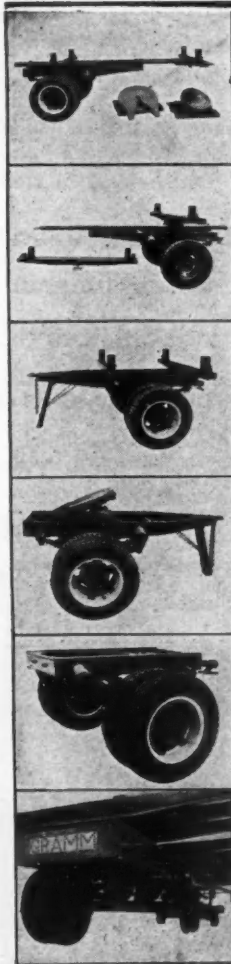
S.373 would provide financial responsibility system requiring insurance of \$5/10/.,000.

S.387 would increase gross weight to 28,000 lb. plus 700 lb. each foot between first and last axle.

S.399 would set-up truck registration fees to range from \$15 if less than 3 tons to \$20 if over 8 tons, plus \$10 for each additional ton; trucks and trailers over 4 tons subject to mileage tax at rate of 1½ mills per ton mile or on optional fixed fee based graduated from \$60 on 4 to 5 tons to \$1,780 over 21 tons. Trucks would be required to keep daily records. Non-resident trucks subject to mileage tax or optional flat fees; irregular route operators required to obtain a travel order.



GRAMM TRAILERS



DUMP Body Trailer Service imposes unusually severe strains upon the Trailer Chassis. Grammm Engineers have designed a chassis for such service. The extra heavy High Tensile Steel Frame Rails are reinforced by both Inner Liners and Truss Type Extra Lower Flanges. Clearance is maintained throughout center sections of frame for easy installation of hoist and body units. Front supports and other equipment is available.

Grammm Safety Spring Suspension and Brake Hookup is the most advanced contribution to Safe Trailer Operation. Brakes are Mechanical type with Wider, Thicker Lining; Longer Wearing Hardened Parts and are Well Ventilated. Operation is by air or vacuum diaphragm chambers Mounted on Axle and operating through Completely Inclosed Pull Rods and Slack Adjusters. Break-away Safety System is standard on all Grammm Brakes.

Grammm Safety Springs are Alloy operating against Cast Alloy Bracket Inserts and restrained by Rubber Rebound Tubes. Radius Rods are husky I-beam section with oversize Rubber Bushings in each end. Safety Third Leaf Ends hold springs in position in emergency. Entire spring suspension requires no lubrication and service cost is practically nothing.

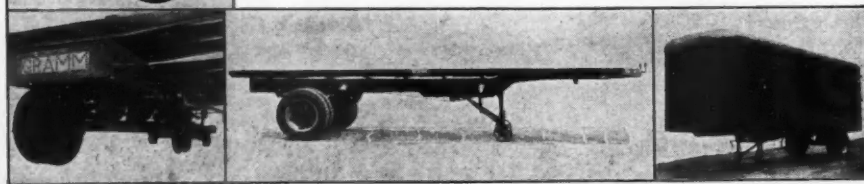
The small illustrations from top to bottom and across show a few other types of Grammm Trailers

Type PA Pole—for fifth wheel equipped truck. Type PB Pole—for body equipped truck. Type PC Utility—for loads of poles, pipes and other supplies. Type PD Front Dolly—for converting semi into four wheel trailers. Type PE Rear Dolly—used to modernize old trailers or as a part of new body or frame designs. Grammm Spring Suspension and Safety Brake features. Grammm Semi-Trailer Chassis with Steel Sub Base. Grammm Van Body for variety of uses.

GRAMM TRAILER DIVISION

DELPHOS, OHIO, U.S.A.

Division Grammm Motor Truck Corp.



H.365 would change registration date to July 1.

H.369 would increase height from 12 ft. to 13 ft., 6 in.

S.418 and H.403 would authorize Highway Commission to stop any motor vehicles for weighing and inspection.

H.403 would provide for weighing and inspection of motor vehicles and trailers.

H.30 would require identification plate on certificated carrier where prescribed by Commerce Commission.

S.469 taxes liquefied gas used in motor vehicles the same as other motor fuels.

H.489 would levy compensation tax on all vehicles over 4 tons; trucks between 4 and 5 tons would pay annual \$50 fee and an additional \$25 per ton up to 16 tons; each additional ton over 16 would pay \$50 per ton.

H.476 would prohibit trucks, tractors, trailers, and semi-trailers from operating on primary roads between Saturday noon and Sunday midnight, except those transporting livestock, dairy products, and perishable goods.

H.416 would remove 25-mile limit on movement of certain vehicles over maximum weight limit when special permit is granted.

H. 108 would increase speed for vehicle drawing another vehicle from 35 to 45 and speed for trucks from 40 to 45 m.p.h.

KANSAS

H.218 would impose \$25 annual license fee on itinerant merchants exempting those with net load not exceeding 3,000 lb.

S.269 would require motor carriers using fuel not already taxed under gas tax law, to pay tax of 3c. per gallon.

H.325 would amend exemption of private carriers to exempt those who operate wholly within radius of 25 miles of municipality.

H.363 would abolish ports of entry.

S.327 would limit length of any motor vehicle to 45 ft.

MAINE

H.1475 would increase gas tax to 5 cents.

H.1478 would tax diesel fuel same as gasoline.

H.1479 would impose 4 cents tax on fuel other than gasoline.

(TURN TO PAGE 168, PLEASE)



New mode in ambulance design is evidenced by this International unit being shipped to England by Czechoslovak Relief. Equipped with all-steel Metro body it is specially fitted out for airport emergency service

SUPER-LOY

Cadmium-Silver

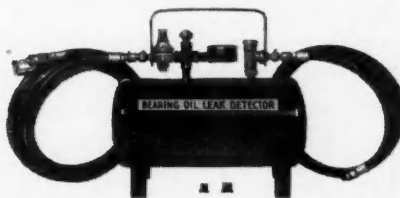
BEARINGS FOR TRUCK *and* BUS

For More Mileage Between Overhauls!

Super-Loy Bearings stand up longer in heavy-duty service. They put more mileage between overhauls, making a worth-while saving in maintenance costs. Where unusual high-temperature conditions are encountered, they produce superior performance. For more mileage, for tough engine overhauls and where there is a crankshaft problem to lick—try Super-Loy Bearings! Ask your Federal-Mogul source of supply.

FEDERAL-MOGUL CORPORATION, DETROIT, MICH.

*Quick
Accurate
Check-up*



The Federal-Mogul Oil Leak Detector provides a quick, accurate check-up of ALL engine bearings and internal conditions, simply by dropping the oil pan. Any mechanic can use it. Diagnose work to be done without tearing down engine. An ideal check-up after overhaul is completed. Send for details and low price.

FEDERAL Mogul

LEGISLATIVE LOOKOUT

(Continued from Page 166)

H.1591 would provide short registration period for trucks; 20 per cent for 1 month for trucks over 4 tons; 10 per cent more each additional month.

H.150 would limit "over all" length of single trucks to 35 ft. (now 40 ft. and combinations to 50 ft. It also revises weights.

MARYLAND

S.282 provides for \$30,000,000 Toll su-

perhighway between Baltimore and Washington.

H.458 would prohibit truck drivers working more than 10 hours aggregate unless they have been off duty 8 consecutive hours within period; drivers required to keep logs.

H.486 would provide that brakes shall be adequate to stop vehicles within 55 ft. and hold vehicle stationary on any grade upon which operated.

MASSACHUSETTS

H.752 would repeal the compulsory insurance law.

MICHIGAN

H.210 would require directional signals for trailers and semi-trailers.

MINNESOTA

S.464 would define truck carrying capacities and would require load limits to be painted on trucks in letters 2½ inches high.

H.828 would amend axle weight provisions (details not available).

H.832 would require all trucks delivering fuel oil to be equipped with meters to measure fuel.

MISSOURI

H.49 would levy 2 per cent automobile use tax.

H.71 would levy tax of 6c. per gallon on lubricating oil and ½c. on crude petroleum and fuel oil derived from petroleum.

H.47 would re-enact sales tax permanently.

H.48 would impose 2 per cent use tax.

H.49 would impose 2 per cent tax on purchase price of new and used motor vehicles.

H.104 would authorize counties and municipalities to fix weight limits.

H.136 would require private carriers to procure permit from Public Service Commission and pay same fees as for-hire carriers.

H.117 would provide 55-mile limit for buses, 40 for trucks.

H.155 would impose caravan fee of \$15 each vehicle whether such vehicle operated under its own power or carried. (Identical with H.18).

H.154 would prohibit vehicle with two levels for carriage of other vehicles.

H.293 would reduce passenger car registration fees; increases fees for commercial vehicles and increases gas tax to 3c. on January 1, 1942.

H.308 would authorize municipalities to provide for inspection of motor vehicles.

H.J.C.R.25 would increase gas tax to 3c. and reduces passenger car registration fees.

H.293 would increase truck fees to range from \$10.50 if capacity not over one-half ton to \$186 if capacity between 9 and 10 tons, plus \$225 each ton in excess of 10; trailers and semi-trailers same as for trucks; increases gas tax to 3c. after Dec. 31, 1941.

H.308 would authorize municipalities to require inspection of motor vehicles—not more than three per year with fee of not more than \$1.00 annually.

H.443 would amend truck registration fees to range from \$1.00 on those not exceeding one-half ton, to \$190 on those between 9 and 10 tons; each ton or fraction thereof in excess of 10 to pay \$100; additional trailers and semi-trailers registered at 5 per cent of foregoing rates; passenger cars and motorcycles, \$1.00; increase gas tax to 4c. after Dec. 31, 1941.

(TURN TO PAGE 170, PLEASE)

And now...

OK's



OK's

INDIUM

The Cummins Engine Company now include in the specifications for its diesel engines, INDIUM treated bearings to prevent corrosive action of any acid in the lubricant. The Cummins Engine Company has found that INDIUM treated bearings wear longer, under more adverse conditions, than any bearing they have yet used.

INDIUM is indispensable for non-ferrous bearings and for non-ferrous surfaces such as washers, contact points, strips, etc., which are exposed to acid deterioration and which must withstand stress, wear, friction, and fatigue.

The INDIUM CORPORATION of AMERICA has pioneered for two decades, with intensive research, the development of INDIUM. Today, INDIUM, hitherto a rare and unknown metal is a dynamic factor of industrial progress.



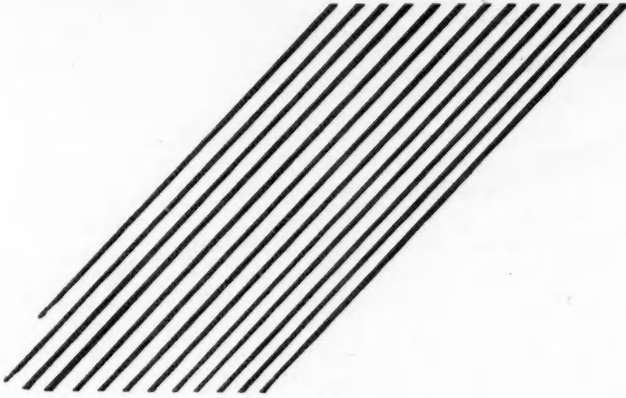
THE INDIUM CORPORATION OF AMERICA

Research and Development Office
60 East 42nd Street, N. Y. C.

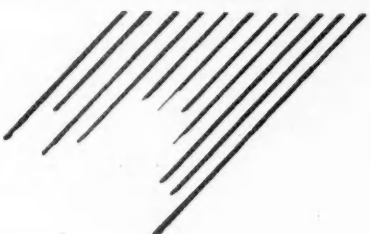
Sales Office and Laboratory
805 Watson Place, Utica, N. Y.

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941



We have what it takes



**TO GIVE COMPLETE TAPERED
ROLLER BEARING SERVICE. And this
is what it includes:**

1. A complete range of over 2,500 sizes—all of them essential for complete coverage.
2. Bearings for all of the eight millions of cars and trucks over eight years old and for the thousands of orphan vehicles.
3. Comprehensive stocks of bearings in sixteen factory-controlled warehouses strategically located throughout the United States and Canada. These stocks are supplemented by those carried by hundreds of distributor outlets.
4. The TIMKEN Bearing is known the world over as a quality product—the result of consistently excellent performance and extensive advertising.

Only the Timken Roller Bearing Company has what it takes to give complete tapered roller bearing service.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Service-sales Division

TIMKEN
TAPERED ROLLER BEARINGS

LEGISLATIVE LOOKOUT

(Continued from Page 168)

MONTANA

CCH S.1614 would provide for regulation of motor carriers by Railroad Commission. CCH S.1619 would amend hours of service for drivers of commercial motor vehicles.

H.338 would impose \$5 license fee on caravanning cars.

Legislature adjourned March 6.

NEBRASKA

Bill 241 would provide for uniform bills of lading of common carriers.

NEVADA

S.42 and S.96 would prohibit double deck transportation of new motor vehicles.

H.214 would limit speed of trucks to 45 m.p.h.

H.232 would limit width to 8 ft., height 12 ft. 6 in., length of vehicle to 35 ft. and gross weight of any combination to 45,000 lb.

S.95 would eliminate necessity for motor carriers to file monthly reports with Public Service Commission.

NEW HAMPSHIRE

H.208 would increase gross weight of two axle vehicles from 28,000 to 30,000 lb.

S.5 would provide \$25 fine for failure to dim headlights and authorizes motor vehicle commissioner to suspend licenses for 10 days. (Passed Senate.)

NEW JERSEY

Senate bill providing for 4-lane military highway near Bordentown to Fort Dix, was unanimously approved by House.

H.305 would increase age for driver's license from 17 to 21 years.

NEW MEXICO

H.95 would raise gas tax from 5c. to 6c. and increase diesel tax from 5c. to 10c.

H.226 would amend size and weight restrictions in accordance with recommendations of 11 Western states.

H.228 would authorize counties to collect 1c. gas tax outside cities.

NEW YORK

H.1218 and S.933 would require driver's license examination to include test on operating ability at night.

H.1219 and S.935 would require operators to have physical examination at least once every three years.

H.1356 and S.881 would authorize Public Service Commission to restrict use of highways to passenger cars on Sundays and holidays.

H.1592 and S.1297 would regulate transportation of inflammable liquids; prohibit registration of trucks, trailers, semi-trailers unless application accompanied by verified, detailed statement certifying compliance with regulations as to equipment and safety devices.

H.1898 and S.1578 would impose tax of 1/10 of 1 per cent on gross income within cities.

H.705 would require motor vehicles manufactured after Jan. 1, 1942, to have two reflectors on front of vehicle. Passed House.

(TURN TO PAGE 172, PLEASE)

A GREAT
Roadway
DEFENSE WEAPON
to "Blackout"
Fire!

Buffalo
"SUPER"

**THE APPROVED HEAVY-DUTY
EXTINGUISHER FOR TRUCKS & BUSES**

● The Buffalo SUPER is a sturdy, swift-action, fool-proof extinguisher that fits truck and bus requirements to a "T". It's always ready for instant service, smothering flames with easy, quick-pumping strokes. Yet it's built throughout every detail to withstand the con-



At the Driver's Fingertips

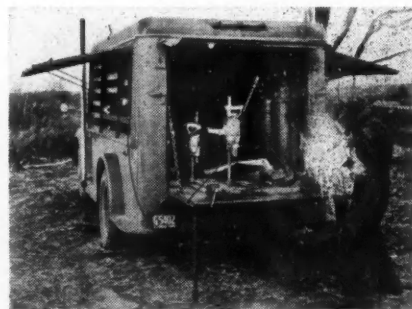
stant jar and pounding of highway travel. May be installed in any position. Will not freeze at 40° below zero. Fully

approved. For complete details, write Dept. N.

Buffalo SUPER Extinguishers are sold By Leading Automotive Jobbers Everywhere.

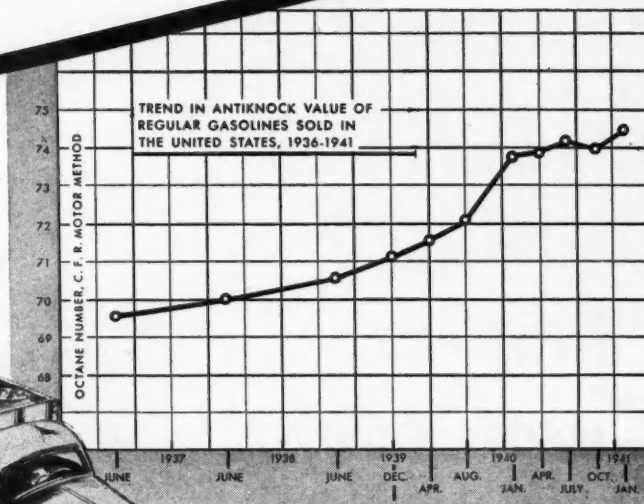
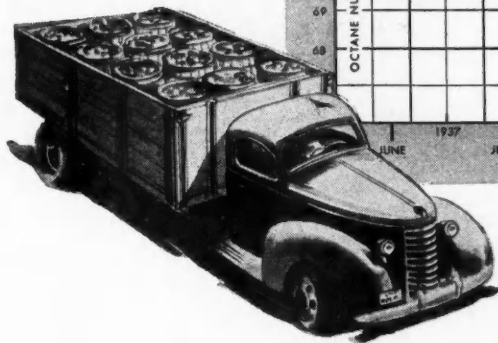
BUFFALO FIRE APPLIANCE CORP.
44 Central Ave., Buffalo, N. Y.

BUFFALO
Better Built
FIRE EXTINGUISHERS



Each year the International Harvester Co. sets out with a "combine caravan" to test the latest in farm equipment under varying conditions throughout the country. This year the caravan includes its own Electric Shop on Wheels replete with electric welding equipment, electric tools and floodlights, so that repairs may be made on the spot, at any time of day or night.

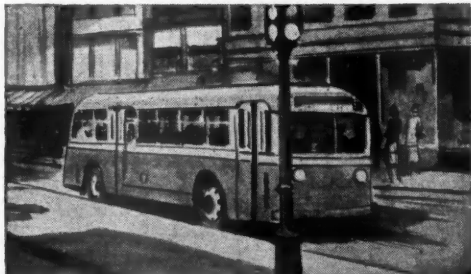
To all department heads



AS THIS LINE GOES UP TRANSPORTATION COSTS GO DOWN!

THE SHARP rise in anti-knock quality of gasoline during the past five years can be utilized by the progressive operator to decrease his cost per ton or passenger mile.

Today's higher octane gasolines have opened up a whole new approach to the problem of getting more *transportation* for every dollar. For fuel economy today is no longer measured by the cost per gallon but by the cost of the *work* accomplished by a gallon of fuel.



Cost per ton or passenger mile should be the yardstick for measuring fuel cost—not the cost per gallon.

Here are the ways in which you can convert the extra quality of modern gasolines into larger payloads, better mileage or faster and more uniform schedules:

In older vehicles by installing high compression pistons or cylinder heads (as supplied by the manufacturer) when engines are overhauled or rebuilt.

In present vehicles which have high compression engines, by advancing the spark as far toward maximum efficiency as the improved gasolines will permit.

In purchasing new equipment by investigating the compression ratios available and specifying a ratio high enough to take full advantage of modern gasoline.

If you are interested in reducing your largest single item of expense—fuel cost—through better operation, Ethyl engineers will be glad to be of service. Write to:

ETHYL GASOLINE CORPORATION
Chrysler Building, New York City.



Ethyl engineers are daily assisting commercial operators in making better use of today's better gasolines.

MAKE BETTER USE OF TODAY'S BETTER GASOLINES

LEGISLATIVE LOOKOUT

(Continued from Page 170)

NORTH CAROLINA

H.91 would exempt private trucks from license fees of contract haulers while engaged in transportation solely on the national defense projects within a 30-mile radius.

S.91 would provide for semi-annual inspection at state operated inspection stations and at charge of not more than 50c.

S.158 would authorize Governor to name 7-man legislative commission to investigate

public carriers and make recommendations to 1943 legislators.

S.212 would provide 18,000 lb. axle weight; removes 40,000 lb. weight limit.

H.564 would require trucks to use designated highways through municipalities.

H.445 would amend definition of motor fuel to include all fuel used to propel motor vehicles and levies 6c. tax on such fuel.

Legislature adjourned March 15.

NORTH DAKOTA

S.182 would provide commercial truck licenses ranging from \$15 to \$150.

H.174 would prohibit sale and use of regrooved tires on motor vehicles.

OKLAHOMA

H.233 would increase use tax from 2 per cent to 3 per cent.

H.340 would levy additional 1c. gas tax.

OREGON

SJR11 would provide that all motor fuel taxes shall be used exclusively for public highways.

S.319 would permit log haulers to exceed 54,000 lb. gross weight.

S.336 would designate ports of entry.

Legislature adjourned March 15.

PENNSYLVANIA

H.366 would fix speed limit of 65 m.p.h. on the Pennsylvania Turnpike for passenger cars and all others 15 miles more than allowed on state highways. Passed House.

H.690 would provide for registration of commercial vehicles according to gross weight instead of chassis weight; establishes 8 classes of registrations up to 40,000 lb.; classifies trailers and semi-trailers up to 36,000 lb.; increases gross weight limits of other vehicles and fixes maximum gross weight of 50,000 lb.

H.733 is anti-diversion constitutional amendments; permits loans from funds for periods not exceeding 8 months to be repaid within one month after beginning of fiscal year in which loan is made.

H.746 would provide 40-mile night speed limit.

H.798 would increase maximum gross weight of 4-wheeled vehicles from 26,000 to 30,000 lb.

H.813 would create state liability insurance fund from proceeds of operators' license fees for purpose of insuring all operators; creates state liability insurance board to administer fund; requires payment of additional operator's license fee.

H.690 would change basis of classifications of trucks from chassis weight to gross weight and reduces slightly registration fees on two lightest classifications and increases fees on heavier classifications proportionate to increases of permissible weight. Increases axle weight from 18,000 to 22,400 lb., two-axle vehicles permitted gross weight up to 30,000 lb., three-axle vehicles to 40,000 lb., and semi-trailers to 50,000 lb.

RHODE ISLAND

H.647 would require labelling of re-treaded, recapped or recut motor vehicle tires.

S.136 would re-define common and contract carriers to conform with Federal definitions.

SOUTH CAROLINA

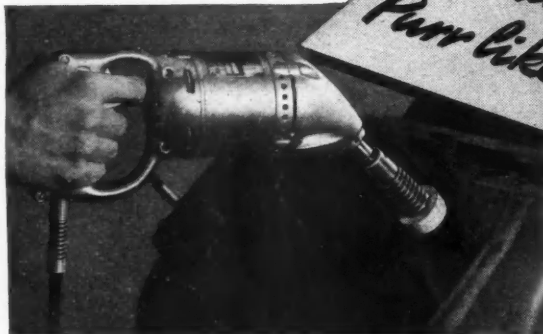
H.76 and S.111 would impose 6c. tax on all fuel used in internal combustion engines.

H.372 would increase gas tax 1/2c.

(TURN TO PAGE 174, PLEASE)

Snap-on Speedi-centric

FOR ALL VALVE SEATS

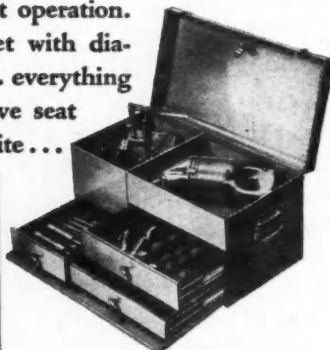
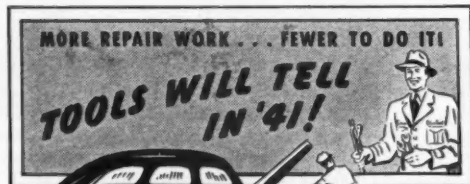


STONE GRINDING
AT ITS FINEST

Now, accurate valve grinding is easier than ever before, because an exclusive Speedi-Centric feature — safety locking — lets you lift the stones from the work at *high speed*, avoiding scuffing or over-grinding, permitting that final "feather touch" that gets you a perfect mirror finish... makes valves "purr like kittens."

Full ball-bearing construction, pilots that center accurately regardless of valve guide wear, built-in angle drive, replaceable oilite bearings in stone carriers and stones 1/3 larger than most stones, are other features that insure better workmanship and lower cost operation.

Speedi-Centric comes complete in cabinet with diamond dresser, stones, carriers, pilots... everything you need for a wide range of expert valve seat service. See your Snap-on salesman, or write...



SNAP-ON TOOLS CORPORATION
Dept. CCJ-4 Kenosha, Wisconsin

Snap-on SERVICE TOOLS
The Choice of Better Mechanics

CASH IN ON THESE PACKARD CABLE "FIRSTS"

FIRST in Original Equipment in Replacement Sales

Year after year, Packard cable has been the choice of leading automotive engineers for original equipment in most trucks and buses, as well as in cars, tractors and planes. Likewise, it is the outstanding leader in replacement sales. The reasons for these "firsts," and the advantages they bring, are the reasons why you stand to profit most by using Packard cable for all your replacements.

Packard's leadership in volume production results in manufacturing economies that mean better cable for the money. It makes possible research laboratories which develop still finer products. It gives Packard an unequalled fund of experience in the manufacture and use of cable, resulting in con-

tinuous improvements. These advantages come to you built into Packard products.

There are types and sizes of Packard cable to meet every requirement. Especially suited to heavy-duty fleet service are Packard 440 and 500 ignition cables, which are protected against heat, oil, moisture, cracking and deterioration by the Packard inorganic sheath. Get your Packard cable requirements from your local Packard jobber. Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

LEGISLATIVE LOOKOUT

(Continued from Page 172)

TEXAS

H.387 would provide flat \$5.00 fee for passenger cars.

H.390 would provide for a 20,000 lb. truck load limit for a period of two years.

H.19 amended to fix maximum gross weight limit at 35,000 lb. (Passed House.)

H.554 would provide \$3 passenger car registration fee.

H.599 would require truck drivers to have 10 hours off duty after 16 on duty.

S.376 and S.380 would permit railroads to operate truck lines.

S.357 would prohibit operation of commercial trucks on Saturdays, Sundays and holidays.

S.381 would promote stringent regulations for trucking of inflammable liquids and explosives. (Details not available.)

UTAH

S.29 would permit non-resident private

truckers to pass through state without purchasing license.

S.18 would impose 4c. tax on diesel fuel.

VERMONT

H.183 would require tank trucks delivering petroleum products to install a sales ticket device that will automatically print number of gallons delivered; ticket to be delivered to consumer with statement showing price per gallon.

H.184 would fix rigid requirements for transportation of inflammable liquids including construction requirements of vehicles.

H.205 would prohibit operation of motor carriers over 6000 lb. gross weight between 1:00 p.m. Saturday and midnight Sunday and between 9:00 a.m. and midnight on any legal holiday, from May 29 to second Sunday of September. Exempts vehicles carrying passengers, live stock, fresh milk and vegetables, ice cream, and newspapers.

H.252 would provide compulsory insurance system requiring \$5/10,000 liability insurance.

H.240 would prohibit vehicles with two levels carrying other motor vehicles, or carrying vehicle, any part of which is more than 115 in. from ground.

WASHINGTON

S.196 would provide truck licenses from \$2 for trucks from 2 to 3 tons to \$250 if between 16 and 17 tons; no license authorized for capacity in excess of 17 tons.

H.380 would repeal licensing of caravanning of motor vehicles.

S.312 would impose tax of 5c. per gallon on diesel oil; requires all users to obtain permit and payment of tax monthly.

H.247 would provide excise tax on motor vehicles.

S.364 would require every truck, trailer or semi-trailer to be equipped with warning side lights.

H.559 would prohibit operation of trailers weighing more than 2000 lb. without load.

S.350 would prohibit trailers of more than 1500 without load.

Substitute H.339 would provide \$10 fee for extension of truck permits.

S.173 would increase weight limit of 2 axle vehicles to 28,000 lb. Passed House.

Legislature adjourned March 15.

WISCONSIN

H.238 would prohibit sleeper cabs on trucks; sleeping quarters for drivers, if necessary, must be furnished at private home or hotel.

H.213 would permit quarterly payment of truck license fee in excess of \$35.

S.219 would reduce motor vehicle license fees 50 per cent.

WYOMING

Legislature adjourned Feb. 22.

A new branch office, serving part of Missouri, southern Illinois-Indiana and western Kentucky, has been opened by the Seiberling Rubber Company at 625 S. Sarah St., St. Louis, Mo. C. E. Hamilton is in charge.



The words "Durability" and "STEWART" have long been synonymous among fleet operators. The STEWART durability, however, has not been acquired through the use of over-sized parts entirely with the resultant sacrifice of performance. In the STEWART Model 58AS TRACTOR illustrated, durability and performance attain a balanced efficiency through the combination of practical engineering, the ability to understand and meet every hauler's problems and quality in each part . . . visible or invisible.

Specializing, now, in trucks of 3-ton capacity and upward STEWART is even better able to study and handle the problems of users of this larger equipment.

STEWART's excellent service and prompt delivery make them, at this time, more than ever deserving of your consideration.

Write TODAY, stating your requirements or problems.

STEWART MOTOR CORP., BUFFALO, N. Y.

Stewart
MOTOR TRUCKS

When writing to advertisers please mention Commercial Car Journal

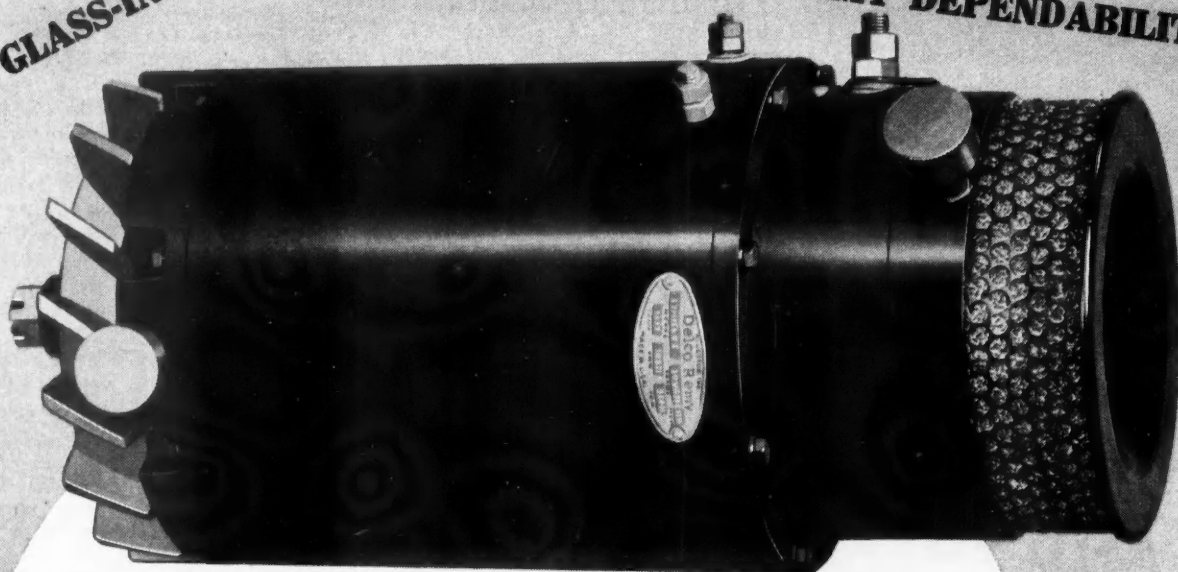
COMMERCIAL CAR JOURNAL
APRIL, 1941

**120 AMPERES—12 VOLTS!
CONTINUOUS PEAK OUTPUT!
GLASS-INSULATED ARMATURE!**

BUILT-IN AIR CLEANER!

**SOLDERLESS ARMATURE
CONNECTIONS!**

DELCO-REMY DEPENDABILITY!



SPECIFY THIS DELCO-REMY HIGHER-OUTPUT GENERATOR

Here's the answer to today's requirements for more generator capacity to meet the electrical needs of modern motor coaches—the Delco-Remy 120-ampere, 12-volt generator.

This generator is designed for *continuous service at peak output*. Its armature is *glass-insulated*, and all armature circuits are continuous copper, with no soldered connections! It is kept cool for continuous peak performance by air drawn through a built-in air cleaner. It provides the latest and finest developments of the world's largest manufacturer of automotive electrical equipment.

Make sure that your new equipment is right in its capacity to take care of modern electrical needs. Avoid costly service interruptions caused by overloaded, smaller generators. Specify the Delco-Remy 120-ampere, 12-volt generator.

Delco-Remy

ANDERSON, INDIANA

World's Largest Manufacturer of Automotive Electrical Equipment



HEAVY-DUTY REGULATOR

The Delco-Remy five-unit heavy-duty Current and Voltage Regulator controls the 120-ampere current safely and dependably.



Service parts for all Delco-Remy electrical units are sold and serviced through United Motors Service distributors and authorized electrical service stations located in all parts of the country. This wide availability of parts and service is an important factor to consider when you select your electrical equipment.

ICC SAFETY REGULATIONS

(For Part III, see page 30; for Part IV, see page 184)

PART I

QUALIFICATIONS OF DRIVERS

INDEX TO PART I

- 1.1 Compliance required. Below.
- 1.2 Minimum requirements. Below.
- 1.3 Physical examination. Below.
Recommended Standard Physical Examination Form. Page 178.

1.1. COMPLIANCE REQUIRED.—Every motor carrier shall comply with the following regulations, and shall instruct his or its employees and agents concerned with the transportation of persons or property by motor vehicle with respect thereto.

1.2 MINIMUM REQUIREMENTS.—No motor carrier shall drive, or require or permit any person to drive, any motor vehicle operated in interstate or foreign

commerce, unless the person so driving possesses the following minimum qualifications:

1.21 MENTAL AND PHYSICAL CONDITION:

(a) No loss of foot, leg, hand or arm.
(b) No mental, nervous, organic, or functional disease, likely to interfere with safe driving.

(c) No loss of fingers, impairment of use of foot, leg, fingers, hand or arm, or other structural defect or limitation, likely to interfere with safe driving.

1.22 EYESIGHT.—Visual acuity (either without glasses or by correction with glasses of at least 20/40 (Snellen) in one eye, and 20/100 (Snellen) in the other eye; form field of not less than 45 degrees in all meridians from the point of fixation; ability to distinguish red, green, and yellow.

1.23 HEARING.—Adequate hearing.

1.24 LIQUOR, NARCOTICS, AND DRUGS.—Shall not be addicted to the use of narcotics or habit-forming drugs, or the excessive use of alcoholic beverages or liquors.

1.25 DRIVING EXPERIENCE.—Experience in driving some type of motor vehicle (including private automobiles) for not less than one year, including experience throughout the four seasons.

1.26 DRIVING SKILL.—Competency by reason of experience or training to operate safely the type of motor vehicle or motor vehicles which he drives.

1.27 KNOWLEDGE OF REGULATIONS.—Knowledge of rules and regulations issued by the Commission under the Motor Carrier Act, 1935, pertaining to the driving of motor vehicles.

1.28 AGE.—Shall not be less than 21 years of age. Provided, however, that a person between the ages of 18 and 21 may be permitted to drive a motor vehicle controlled and operated by any farmer and used in the transportation of his agricultural commodities and products thereof or in the transportation of supplies to his farm, if such vehicle does not exceed a gross weight, including the load, of 10,000 pounds.

1.29 KNOWLEDGE OF ENGLISH.—Shall be able to read and speak the English language.

1.3 PHYSICAL EXAMINATION.

1.31 DOCTOR'S CERTIFICATE REQUIRED FOR NEW DRIVERS.—On and after January 1, 1940, every motor carrier shall have in his files a certificate of physical examination signed by a qualified doctor of medicine for every new driver entering the motor carrier's employment, attesting that the doctor has examined said driver and found him to meet satisfactorily the qualifications set forth in Rules 1.21 to 1.23, inclusive. Said certificate shall be filed with the motor carrier within ten days of the new driver's entering the motor carrier's employment. For the purposes of this rule, a new driver shall be deemed to be any driver applying for employment as a driver who is unable to furnish a certificate of physical examination showing that he has been examined and qualified as required by this rule within one year prior to the date of his application (TURN TO PAGE 178, PLEASE)

AT-TEN-SHUN!

STOP FITTING TROUBLES AND FUEL LINE DIFFICULTIES

WITH

WEATHERHEAD Fittings & Flexible Hose

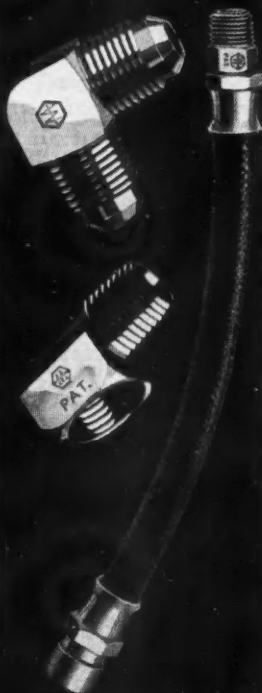
YOUR jobber has both—Weatherhead original equipment replacement fittings as well as Weatherhead fuel lines in coils or ready-to-install lines with fittings attached.

To play safe when replacements are necessary—just specify Weatherhead.

THE WEATHERHEAD CO.
300 E. 131st St. Cleveland, Ohio

WEATHERHEAD

FITTINGS • FUEL LINES • BRAKE PARTS • HYDROMETERS • DASH CONTROLS



WALTER SNOW FIGHTERS ARE MADE IN THE ONLY PLANT DEVOTED ENTIRELY TO — FOUR WHEEL DRIVE —



It took a quarter-century of specialization on four-wheel drive to produce the hard-hitting Walter Snow Fighter of today. During *all* of that time *all* of the attention of *all* of the personnel of this Company—management, engineering and manufacturing—has been concentrated on the task of producing the best possible type of four-wheel drive. Because of its amazingly superior

performance we call it "Four-Point Positive Drive". Walter Snow Fighters are built in a modern plant of ample area to insure uncrowded straight-line production by skilled workmen. Only by uninterrupted manufacture of four-wheel drive units exclusively has it been possible to turn out a vehicle that will stand up under the punishment that the Walter takes as daily fare in the heavy snow regions. Send for literature.



Walter Snow Fighter with Offset V Plow and Right Wing.



Walter Tractor Truck with Center Scraper Blade.

WALTER MOTOR TRUCK CO.

1001-19 IRVING AVENUE, RIDGEWOOD, QUEENS, L. I., N. Y.

ICC SAFETY REGULATIONS

(Continued from Page 176)


for employment. This requirement shall also apply to owner-drivers, who become such on and after January 1, 1940. Provided, however, that this rule shall not apply to the operation of motor vehicles controlled and operated by any farmer and used in the transportation of his agricultural commodities and products thereof, or in the transportation of supplies to his farm. (Effective date of above requirement

Oct. 15, 1940, for private carriers or property).

1.32 CARRIER'S RIGHT TO REQUIRE ADDITIONAL EXAMINATIONS.—Nothing contained in Rule 1.31 shall be so construed as to prevent a motor carrier from requiring physical examinations of drivers in addition to those prescribed in that rule.

(TURN TO PAGE 180, PLEASE)

THE GUTS OF YOUR OIL FILTER IS Worth 15¢



BUT YOU'VE
BEEN PAYING UP
TO \$1.50 BECAUSE IT'S PACKED
IN A "ONE SHOT" CONTAINER



Bolser RE-PAK-IT cartridge—Heavy gauge steel for lifetime service.

You can stop this needless waste—by using a Bolser RE-PAK-IT Filter Cartridge. You use the cartridge over and over again—simply re-pack it with Bolser High Efficiency Filter Fibre—at an average cost of 15¢ a change! It's the same material found in the better—more expensive—filter replacements. If you are a qualified fleet owner write for a sample RE-PAK-IT cartridge—and you'll see for yourself. Just tell us what filter you are now using. No charge—and no obligation.

BOLSER CORP., CEDAR FALLS, IOWA
Manufacturers of BOLSER FLARES AND SAFETY EQUIPMENT.

RECOMMENDED PRACTICES

(Not compulsory requirements)

The following form is recommended as a Standard Physical Examination form in connection with physical examination of drivers required under Rule 1.3:

RECOMMENDED STANDARD PHYSICAL EXAMINATION FORM

For Drivers of Interstate Buses and Trucks
(Note to Examining Physician): Read instructions before starting examination.

Be sure to record an answer to each question.
When negative or positive so state

PERSONAL AND MEDICAL HISTORY

Name in full _____
Age last birthday _____ Color _____
Marital Status _____ S M W D
Address: Street _____ City _____ State _____
Usual occupation _____
Years experience as operator of commercial motor vehicles _____

History of past illnesses
(When positive insert date)

Tuberculosis _____ Hemorrhoids _____ Diabetes _____
Pleurisy _____ Syncope _____ Syphilis _____
Hemoptysis _____ High Blood _____ Gonorrhea _____
Peptic Ulcer _____ Pressure _____ Hematuria _____
Pneumonia _____ Epilepsy or Fits _____
Dysentery _____ Paralysis _____
History of hospitalization _____
Have you other illnesses, injuries, or operations _____

RECORD OF PHYSICAL FINDINGS

General Appearance and Development: Good _____
Fair _____ Poor _____
Height _____ Weight _____

Head:
Eyes: For distance _____ {without glasses} Right 20/
_____ {with glasses if worn} Left 20/
Evidence of disease or injury: Right _____ Left _____
Color Vision (Lantern) _____
Ears: Hearing, 20 ft.: Right ear /20 Left ear /20
Disease or injury _____
Mouth _____ Throat _____

Thorax:
Heart _____
If organic disease is present, is it fully compensated? _____
Blood pressure (sitting): Systolic _____ Diastolic _____
Pulse: Before exercise _____ After 2 min. rest _____
Lungs _____

Abdomen:
Scars _____ Abnormal masses _____ Tenderness _____
Hernia: Yes _____ No _____ If so, where? _____
Is truss worn? _____

Genito-Urinary:
Scars _____ Urethral Discharge _____

Reflexes:
Romberg _____
Pupillary _____ Light R _____ L _____
Accommodation: R _____ L _____
Knee Jerks:
Right: Normal _____ Increased _____ Absent _____
Left: Normal _____ Increased _____ Absent _____

Extremities:
Upper _____
Lower _____
Spine _____

Laboratory findings if tests are indicated:
Urine: Sp. Gr. _____ Alb. _____ Sug. _____
Other _____
(Date) _____ (Examining Physician) _____

PHYSICIAN'S CERTIFICATE

This is to certify that I have this day examined _____ and find him
(physically fit)
(physically fit only when wearing glasses)
(physically unfit and disqualifying condition has been discussed with applicant)

to perform the usual duties incident to employment as a driver of commercial motor vehicles. This certificate is based upon information obtained in the making of a physical examination in accordance with the regulations of the Interstate Commerce Commission for the qualification of drivers and the standard form recommended for such examination. I have kept on file in my office this record of his examination.

Date _____ Place _____ Signed _____
(Examining physician)
Address _____
Driver's Signature _____

NOTE—Motor carriers desiring to use the Recommended Standard Physical Examination Form and Physician's Certificate must obtain their own supplies of such forms. The forms should be reproduced in size considerably larger than here shown.

Clearing a Path for Truck Profits with REPUBLIC DOUBLE STRENGTH STEEL



IN THIS EMERGENCY

Paraphrasing an old operatic lyric—"A steelman's lot is not a happy one." When business is at low ebb, the struggle is to get enough tonnage to produce steel economically. When the tide of business swings to the other extreme, the big job we all have is to satisfy the customer who is unable to get all the steel he needs.

Believe me when I say that this is one time when the wheel that squeaks the loudest is not getting the grease. We are doing everything humanly possible to be helpful in this emergency and to be fair in the apportioning of our output—and to assist you further we are constantly setting new records in all our plants in our production of steel—first line of national defense.

R. J. Hyson
PRESIDENT



Again, "Double Strength" does double duty. First, its excellent performance, even at sub-zero temperatures, makes it a "natural" for use in this highway snow plow. Second, its high tensile strength permits the use of lighter sections and reduced weight in the construction of trucks which must follow.

Heavy snows may be no longer with us this year but the benefits of easy fabrication, increased pay loads and increased profits are always yours—with Republic Double Strength Steels.

If you would like to read the interesting story of Republic Double Strength Steels and their advantages to truck and trailer users—ask for Booklet 353.

REPUBLIC STEEL CORPORATION

Alloy Steel Division, Massillon, Ohio; General Offices, Cleveland, Ohio

BERGER MANUFACTURING DIVISION • CULVERT DIVISION • NILES STEEL PRODUCTS DIVISION
STEEL AND TUBES DIVISION • UNION DRAWN STEEL DIVISION • TRUSCON STEEL COMPANY

REPUBLIC DOUBLE STRENGTH STEELS

SHEETS • STRIP • PLATES • BARS • BOLTS • NUTS • RIVETS

Weight-Saving • Stronger • More Corrosion-Resistant

ICC SAFETY REGULATIONS

(Continued from Page 178)

GENERAL INSTRUCTIONS FOR MAKING PHYSICAL EXAMINATION AND RECORDING FINDINGS

Be sure to record an answer to each question. When negative or positive so state

MEDICAL HISTORY

The purpose of this physical examination is to detect the presence of physical defects of such a character and extent

as to affect the applicant's ability to safely operate a motor vehicle. The examination should be made carefully and at least as complete as is indicated by the attached form. Defects may be recorded which do not, because of their character or degree, indicate that a certificate of physical fitness should be denied. The presence, however, of these defects should be discussed with the applicant and he should be encouraged to take the necessary steps to insure correction particularly of those

which if neglected might lead to a condition likely to affect his ability to drive safely. Careful inquiry regarding past illness, the character and date of such illness, may reveal cause for defects found upon physical examination. Lack of knowledge concerning the etiology of certain defects may result in the rejection for employment. Such data also may indicate the need for making certain laboratory tests. Certain serological and laboratory tests will frequently be made by State Department of Health laboratories without charge.

General Appearance and Development.—Notice serious under or over weight; any posture defects; perceptible limp, anemia, tremor or other form of nervousness such as might be caused by chronic alcoholism, thyroid intoxication, or other illnesses. The rules of the Interstate Commerce Commission provide that no driver shall be addicted to the use of narcotics, or habit-forming drugs, or the excessive use of alcoholic beverages or liquors.

Height and weight.—Stripped to the waist with shoes and socks removed.

Head—Eyes.—The telebinocular, Snellen chart, and other approved tests may be used to measure visual acuity. It is desired, however, when other than the Snellen chart is used, that the results of such test be expressed in values comparable to the standard Snellen chart. If applicant wears glasses, these should be worn while applicant's visual acuity is being tested. Indicate on record by encircling appropriate phrase on form "without glasses" or "with glasses if worn." In recording distant vision use 20 feet as normal. Report all vision as a fraction with 20 as numerator and the smallest type read at 20 feet as denominator. Note ptosis, discharge, corneal scar, exophthalmos or strabismus uncorrected by glasses as determined by the simple cover test.

Ears.—Note evidence of mastoid or middle ear disease; discharge. In recording hearing record 20 feet as normal distance for conversational voice and record deviation from normal as fraction with 20 feet as denominator and actual distance as numerator.

Mouth.—Note evidence of infection, pyorrhea.

Throat.—Note evidence of disease, enlarged or infected tonsils.

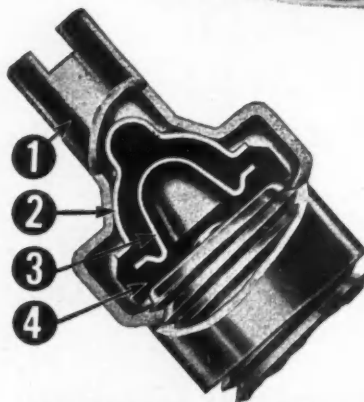
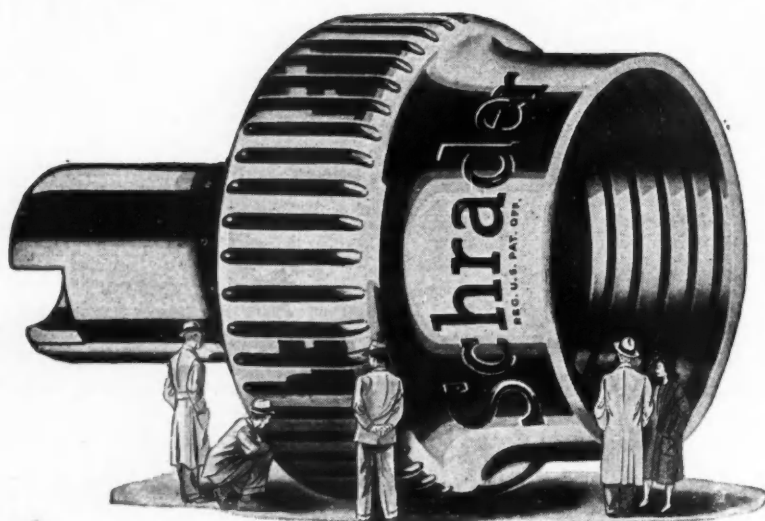
Thorax—Heart.—Stethoscopic examination is required. Note murmurs and arrhythmia.

Blood pressure.—May be recorded with either spring or mercury column type of sphygmomanometer.

Pulse.—Normal pulse taken after being seated at least 2 minutes then have applicant stand and placing one foot on the seat of an ordinary chair raise his body to an erect position 20 times in 30 seconds. Pulse rate should return to his normal after 2 minutes rest. Because of abnormal conditions, some applicants will be unable to do this. This test has been found helpful in ascertaining physical ability for work.

Lungs.—It is necessary that the auscultation (TURN TO PAGE 182, PLEASE)

IF A VALVE CAP WERE BIG AS A HOUSE..



Why Schrader Valve Caps Are Air-tight Up to 250 lbs. Pressure

1. Valve Cap body or shell.
2. Brass Swivel Plate allows Cap Shell to turn independently of rubber washer as Cap is applied. This assures proper seating of washer and prevents distortion.
3. Brass Dome-Shaped Plate provides an indestructible chamber for safe clearance of valve core pin.
4. Molded Rubber Washer seals valve mouth when Cap is screwed on firmly by hand; while rubber between brass plates 2 and 3 provides spring action to maintain positive seal.

A. SCHRADER'S SON Division of Scovill Manufacturing Company, Inc. BROOKLYN, N. Y.

you could make a tour of inspection through this giant cap and see the many unique construction features. But size could add nothing to its importance as a tire valve seal.

The dirt and muck that accumulate on a wheel are extremely abrasive and destructive to wearing or seating parts. A sealing cap is therefore essential to keep this dirt and grit out of the valve and to prevent possible loss of tire air through the valve.

NOTE TO TIRE SERVICE MEN

Seal every tire valve with an air-tight cap. This essential safety measure helps to maintain balanced tire pressures and prevent costly roadside delays.

Schrader

TIRE VALVE CAPS



Warner

ELECTRIC BRAKES

DESIGNED EXPRESSLY

FOR

TRAILING EQUIPMENT

☆ ☆ ☆ ☆ ☆
For
Complete Information
Write
☆ ☆ ☆ ☆ ☆

WARNER ELECTRIC BRAKE MFG. CO.
BELOIT, WISCONSIN

ICC SAFETY REGULATIONS

(Continued from Page 180)

tory cough be used. Tuberculosis, if suspected state whether active or arrested, and if arrested, your opinion as to how long it has been quiescent. Sputum to be examined for tubercle bacilli in all suspected cases. Sample may be sent to the State Health Department.

Abdomen—Scars.—If present state whether recent and if abnormally tender or if there is any evidence of hernia at the site of scar.

Abnormal masses.—If present note

tenderness and whether or not individual knows how long they have been present.

Tenderness.—When noted state where most pronounced and cause suspected.

Hernia.—Note whether no hernia, but impulse on coughing; no hernia or impulse, but abnormally large rings. Any hernia should be noted, and if present state whether it is retained by well-fitted truss.

Genito—Urinary.—When scars or urethral discharge are present indicate patient's reason for same and when indicated

submit smear of discharge to laboratory for examination.

Reflexes.—If positive Rhomberg is reported, indicate degree. Pupillary reflexes should be reported for both light and accommodation. Knee jerks are to be reported absent only when not obtainable upon reinforcement and increased when foot is actually lifted from the floor following light blown upon the patella; otherwise as normal.

Extremities—Upper.—Note deformities and limitation of motion.

Lower.—Note deformities, limitation of motion; varicose veins. In case of hand deformities not particularly whether or not sufficient grip is present to enable driver to secure a grip on the wheel. Show chronic ulcers. Note any atrophy or paralysis.

Spine.—Note deformities and limitation of motion. Be sure to record loss of foot, leg, fingers, hand or arm, or impairment of use thereof, or other structural defect or limitation, likely to interfere with safe driving.

Laboratory findings.—Urine analysis is indicated whenever systolic blood pressure is over 150 and diastolic over 100 and such other times as medical history or findings upon physical examination may indicate that they are necessary. A serological test should always be taken in case of those giving positive history of leucic infection or present physical findings presenting possibility of latent syphilis.

Upon completion of the examination, physician should always date and sign his record of the same.

(FOR PART V, SEE PAGE 184)



LINK-BELT ROLLER BEARINGS

Cost Less Because They Last Longer!



Most brands of bearings are made of good metals—most are manufactured skillfully—but only *one* brand has the convex-concave roller principle which compensates for wear and adds many extra miles of smooth, dependable performance. The bearings that have this important design feature are Link-Belt Shafer Roller Bearings. Your jobber can tell you all about them and explain in detail why they are tops in performance amongst all replacement bearings for front wheels, differentials and rear axles. Ask for Link-Belt Shafer Roller Bearings.

8506

LINK-BELT COMPANY

519 N. Holmes Ave., Indianapolis, Indiana
Warehouses in all principal trading centers
Made by the makers of the famous
Silverstreak Silent Timing Chain!

LINK-BELT
SHAFER
ROLLER BEARINGS

FOR
FRONT WHEELS
DIFFERENTIALS
AND
REAR AXLES

Livestock Record

Livestock shipments arriving by truck at the Chicago yards during 1940 set a new volume record 23 per cent above the previous high. The average haul was 120 miles, and shipments were received from 17 states.



Eight hundred posters like this one have made their appearance at Esso bulk plants throughout Eastern states

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

BACKBONE

... OF A BIG

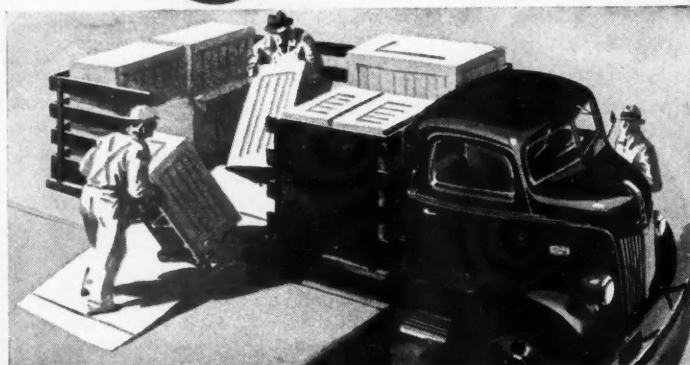
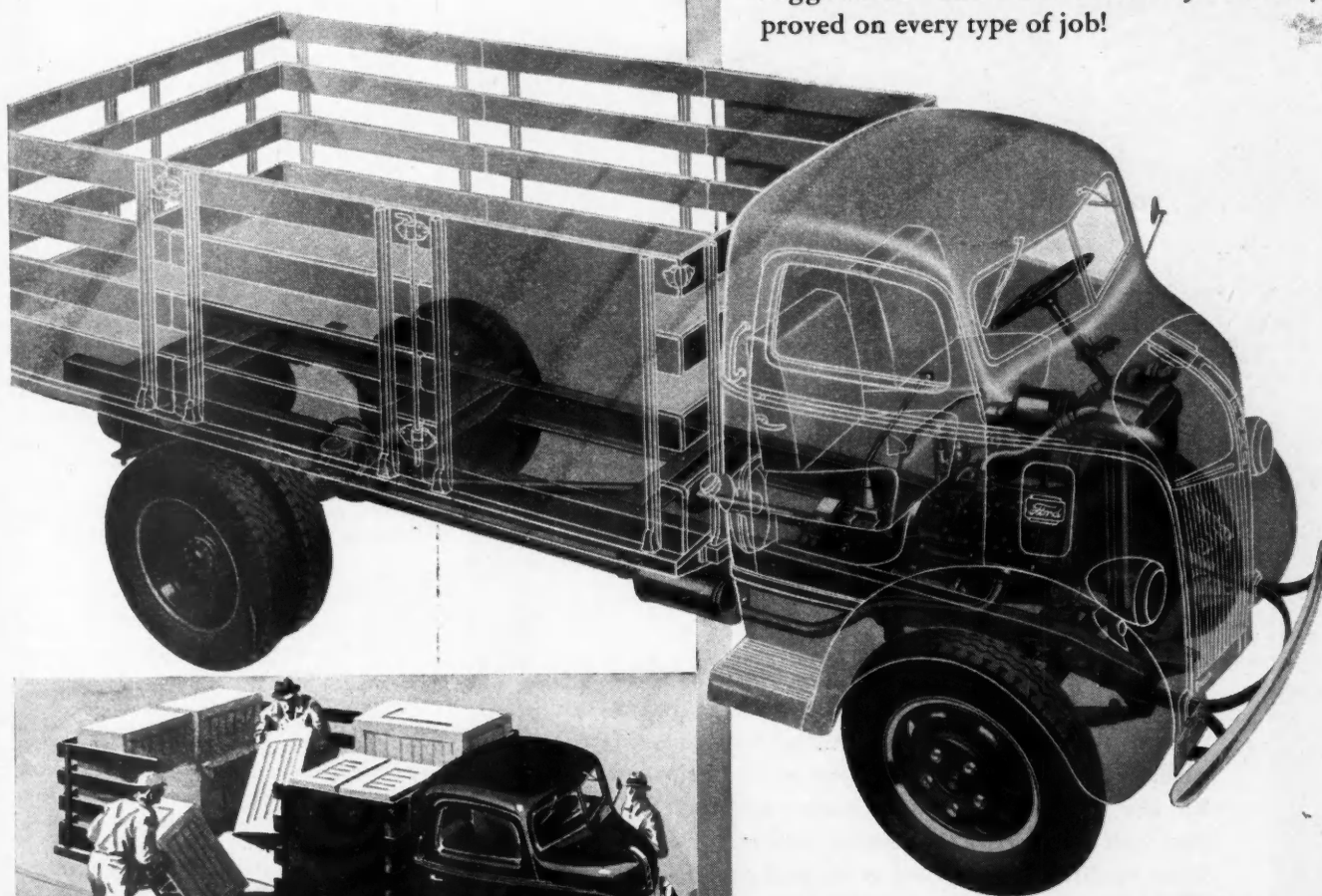
DAY'S WORK!

A 1941 FORD TRUCK does a big day's work because it:

- ★ Is *built* for hard work from the *inside out*.
- ★ Has more horsepower (95) than any other low-priced truck—delivers high torque over a wide range of road speeds.
- ★ Has the strongest chassis ever built by the Ford Motor Company, America's most experienced truck manufacturer.
- ★ Has *extra* big brakes, *oversize* clutch, *extra* heavy springs and the *biggest* spindles and bearings in front wheels of any comparable truck.

These and other features *insure extra strength where extra strength counts!*

Make a searching "on-your-job" test of Ford ruggedness—and FORD *economy*—already proved on every type of job!



FORD CAB-OVER-ENGINE TRUCKS maneuver easily in traffic and crowded loading spaces and alleys. Wheelbases of 101", 134", and 158" accommodate standard and special bodies ... give large payload space with short over-all length.

FORD TRUCKS and COMMERCIAL CARS



ICC SAFETY REGULATIONS

(Continued from Page 182)

PART 5—HOURS
OF SERVICE OF DRIVERS

Rule 1

As used in these regulations:

(a) The term "motor vehicle" means any vehicle, machine, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property, or any combination thereof determined by the Commission, but does

not include any vehicle, locomotive, or car operated exclusively on a rail or rails.

(b) The term "driver" means any individual who drives in transportation in interstate or foreign commerce any motor vehicle as defined in paragraph (a) above.

(c) A driver is on duty from the time he begins to work or is required to be in readiness to work until the time he is relieved from work and all responsibility for performing work. Time spent by a driver resting or sleeping in a berth as

defined in paragraph (g) of this rule shall not be included in computing time on duty.

(d) The term "drive or operate" includes all time spent on a moving vehicle and any interval not in excess of 10 minutes in which a driver is on duty but not on a moving vehicle. For the purpose of computing an interval in excess of 10 minutes, all stops made in any one village, town or city may be computed as one if the driver has not driven or operated the motor vehicle more than 10 miles in such village, town, or city. The term "drive or operate" does not include time spent resting or sleeping in a berth as defined in paragraph (g) of this rule.

(e) The term "week" means any period of 168 consecutive hours beginning at the time the driver reports for duty, as defined in paragraph (c) of this rule.

(f) The term "24 consecutive hours" means any such period starting at the time the driver reports for duty, as defined in paragraph (c) of this rule.

(g) The term "berth" means a berth or bunk on the motor vehicle which is properly equipped for the purpose of sleeping, including springs and a mattress, or an inner-spring mattress, pillow, adequate bed clothing, adequate ventilation, and ready means of entering and leaving the berth.

(h) Where any other terms used in these regulations are defined in section 203 (a) of the Motor Carrier Act, 1935, such definitions shall be controlling. Where terms are used in the regulations which are neither defined herein nor in said section 203 (a), they shall have the ordinary practical meaning of such terms.

Rule 2

Every motor carrier and his or its officers, agents, employees, and representatives shall comply with the following regulations, and every such motor carrier shall require that his or its officers, agents, employees, and representatives shall be conversant with these regulations.

Rule 3

(a) No carrier subject to these regulations shall permit or require any driver in his employ to remain on duty, as defined in paragraph (c) of rule 1, for a total of more than 60 hours in any week, as defined in paragraph (e) of rule 1; provided, however, that carriers operating vehicles on every day of the week may permit drivers in their employ to remain on duty for a total of not more than 70 hours in any period of 192 consecutive hours. Provided, further, however, that this rule shall not apply with respect to drivers of motor vehicles engaged solely in making deliveries for retail stores during the period from December 10 to December 25, both inclusive, of each year. Also provided, that this rule shall not apply with respect to drivers of motor vehicles controlled and operated by any farmer and used in the transportation of his agricultural commodities and products thereof, or in the transportation of supplies to his farm; nor shall it apply with respect to (TURN TO PAGE 186, PLEASE)

SERVING THE TRANSPORTATION FIELD



Dependable Continental Engines . . .

Always on the Job

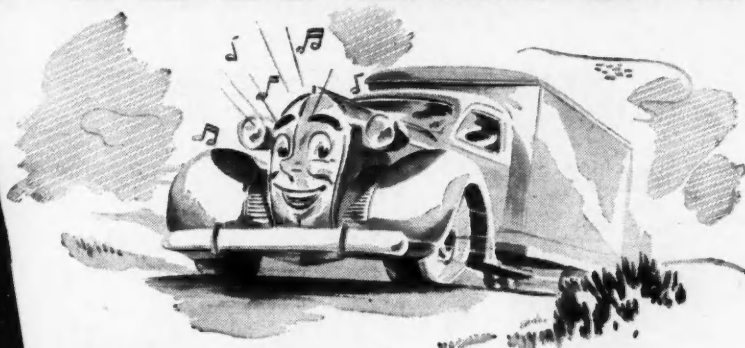
For 40 years Continental Red Seal Engines have been put to work in the field of transportation. From the beginning, the dependability of Red Seal Power has never faltered. To the contrary, it has been strengthened through the years by added experience, by finer facilities — by more intensive effort, so its acknowledged leadership would always be maintained.

Today, Dependable Red Seal Power is in a better position than ever before, to serve the entire transportation field.

Continental Motors Corporation

MUSKEGON, MICHIGAN

GOOD NEWS FOR FLEET OWNERS!



**Motors Sing from the Start —
and for Keeps — with Amazing
TOLEDO BREAK-IN MOTOR OIL!**

MOST engine trouble is caused by improper lubrication during the break-in period. Year in and year out, the life of any new or rebuilt motor depends upon its care during this period.

The fact that modern engines new and rebuilt are fitted to such close tolerances makes it essential that they be broken in properly in order to insure long life and efficient operation. For that reason, the Standard Oil Company of California, one of the leaders in engine lubrication development, was commissioned to develop a vastly superior break-in motor oil for us.

Toledo Break-In Motor Oil is the finest on the market! It is not an additive, but a complete fill—to safeguard your engines from the day you buy them, and after every overhaul.

This initial precaution pays big dividends throughout the entire life of your motor—in lower maintenance, lower operating costs—and gives you a sweeter-running engine, mile after mile!

WINS EVERY TEST! Research on Toledo Break-In Motor Oil took many years. Road testing consumed almost a million miles, Dynamometer testing almost 12,000 hours. For the essentials of perfect break-in, Toledo wins every test! See your Toledo representative about this amazing new oil, or write Toledo Steel Products Co., Toledo, Ohio.

6 REASONS WHY THIS UNIQUE OIL SAVES YOU MONEY!

- Prevents Ring Freezing!
- Prevents Welding!
- Prevents Scoring!
- Polishes as It Lubricates!
- Prevents Engine Varnish!
- Non-Corrosive!

Available in 1-quart, 5-gallon, 15-gallon and 54-gallon sealed containers

**Write for Facts
NOW!**



TOLEDO BREAK-IN MOTOR OIL

ICC SAFETY REGULATIONS

(Continued from Page 184)

driver-salesmen employed by private carriers of property who devote more than 50 per cent of their time to selling and less than 50 per cent to such work as driving, loading, unloading, and the like.

(b) Except under conditions set forth in rule 6 (a) and (b) hereof, no carrier subject to these regulations shall permit or require a driver in his employ to drive or operate for more than 10 hours in the aggregate in any period of 24 consecutive hours, unless such driver be off duty for 8 con-

secutive hours during or immediately following the 10 hours aggregate driving and within said period of 24 consecutive hours; provided, however, that two periods of resting or sleeping in a berth, as defined in paragraph (g) of rule 1, may be cumulated to give the aforesaid total of 8 hours off duty.

Provided, however, that no driver of a motor vehicle controlled and operated by any farmer and used in the transportation of his agricultural commodities and prod-

ucts thereof, or in the transportation of supplies to his farm, shall be permitted or required to drive such motor vehicle for more than an aggregate of 50 hours in any week, as defined in paragraph (e) of rule 1 of said regulations; provided further, however, that no driver-salesman employed by a private carrier of property who devotes more than 50 per cent of his time to selling and less than 50 per cent to such work as driving, loading, unloading, and the like, shall be permitted or required to drive or operate a motor vehicle for more than an aggregate of 50 hours in any week as defined in paragraph (e) of rule 1 of said regulations.

Rule 4

No carrier subject to these regulations if himself a driver shall remain on duty or drive for longer periods than those prescribed in rule 3 hereof for employed drivers.

Rule 5

(a) Each carrier subject to these regulations shall require that a driver's log in duplicate shall be kept by every driver in his employ who operates a motor vehicle engaged in transportation in interstate or foreign commerce, and, if himself an owner-driver, shall keep such a log. Entries in said driver's log shall be made by the driver, and shall show the place of origin and destination of the trip, the times of reporting for duty and of going off duty, the periods of driving or operating and other work, and any other information found desirable; provided, however, that the foregoing provisions of this rule shall not apply to drivers engaged in the transportation of passengers or property in interstate or foreign commerce wholly within a municipality or between contiguous municipalities or within a zone adjacent to and commercially a part of any such municipality or municipalities; and provided further, however, that the foregoing provisions of this rule shall not apply to any driver engaged in the transportation of passengers in interstate or foreign commerce while on a regular schedule over a regular route, mainly in urban and suburban areas, and when such regular route is not longer than 35 miles from the garage or terminal to the point or place where the motor vehicle starts on its return trip; provided further, however, that the second proviso hereof shall apply only to drivers employed by carriers who maintain records which show the total number of hours of driving per day, the total number of hours on duty per day, and the total number of hours on duty per week of each such driver.

Provided further, however, that this rule shall not apply with respect to drivers of farm trucks or to drivers of motor vehicles of private carriers of property commonly called work trucks or work cars which are especially designed or equipped for use and are used solely in the construction or maintenance of their plants and equipment.

(b) Each carrier shall make monthly reports to the Bureau of Motor Carriers, Interstate Commerce Commission, Washington, D. C., prior to the fifteenth day of each succeeding month, of every instance

(TURN TO PAGE 188, PLEASE)



KESTER SOLDER SAVE MONEY in motor truck maintenance

When you're responsible for the low cost maintenance of a big fleet of trucks, it pays to standardize on Kester Acid-Filled Solder for all general repair work. This is the solder that does the job right the first time. And it's easy to use.

The all-important flux is sealed in the core of the solder itself and your mechanics don't have to bother with messy and often inefficient separate fluxes.

Kester Acid-Filled Solder is pure solder, made from virgin metals only. No reclaimed metals are ever used in its manufacture

to add impurities to the alloy and reduce its effectiveness.

If you're hard pressed to keep a big fleet of trucks rolling every day, investigate all the advantages of making solder-repairs with Kester. Workmen will save time on every job that calls for soldering and their work will be permanent. This extra speed and reliability can become an important factor in reducing maintenance costs.

Order Kester Acid-Filled Solder for all general repairs from your wholesaler.

KESTER SOLDER COMPANY
4205 WRIGHTWOOD AVENUE CHICAGO, ILLINOIS
Eastern Plant: Newark, N. J. Canadian Plant: Brantford, Ont.

KESTER SOLDER
FOR EVERY AUTOMOTIVE USE



6-WHEELERS offer the
same safety and economy
all over the map

State laws cannot change a mechanical principle. Superior safety and low-cost operating features are fundamental in the very design of Six-Wheel Trucks and are, therefore, the same in California as in Maine. Lawmakers in most states fully recognize the fact that this type of vehicle is a definite step forward in haulage units and have shaped fair and undiscriminatory laws accordingly. Still, it must be admitted that there remain a few states whose legislators have not yet accepted the fact that six-wheelers have earned the right to a gross weight parity with tractor semi-trailers. Responsible fleet owners, concerned with the safety of the public as well as with haulage costs, will do well to put the truth about six-wheelers before their representatives. Insurance statistics and operating cost sheets provide a most convincing case.

THE TRUCKTOR CORPORATION
156 WILSON AVENUE NEWARK, N. J.

Trucktor

ICC SAFETY REGULATIONS

(Continued from Page 186)

where a driver has been required or permitted to be on duty or to drive or operate for hours in excess of those prescribed by these regulations, and shall fully explain the reasons for and circumstances surrounding such violations. Such reports shall be in writing and sworn to. (This section not applicable to any private carrier of property!)

Rule 6

(a) In case of snow, sleet, fog, or other

adverse weather conditions, or in case the highways are covered with snow or ice, or presence of unusual adverse road and traffic conditions, a driver may be permitted and required to drive or operate a motor vehicle for not more than 12 hours in the aggregate in any period of 24 consecutive hours in order to complete his run, without being off duty for a period of 8 consecutive hours as provided by rule 3, and this longer period of driving is permitted even though conditions named

herein are known to the employer before the trip is begun.

(b) If a driver is permitted or required under the provisions of subdivision (a) of this rule to drive in excess of 10 hours in the aggregate in any 24-hour period without being off duty for a period of 8 consecutive hours during or immediately following the period of 10 hours driving and within said period of 24 consecutive hours, a report must be made immediately to the Commission, addressed to the district office of the Bureau of Motor Carriers of the district in which the carrier's headquarters is located, and such report shall contain a full and correct statement of the conditions which necessitated the longer period of driving. (This section not applicable to any private carrier of property!)

(c) In case of any emergency a driver may complete his run without being in violation of the provisions of these regulations, if such run could reasonably have been completed without such violation.

Rule 7

These regulations shall not apply to any carrier subject thereto when transporting passengers or property to or from any section of the country with the object of providing relief in case of earthquake, flood, fire, famine, drought, epidemic, pestilence, or other calamitous visitation or disaster.

Offices of ICC District Directors

THE OFFICES OF THE DISTRICT DIRECTORS, BUREAU OF MOTOR CARRIERS, INTERSTATE COMMERCE COMMISSION, ARE AS FOLLOWS:

District No. 1 (Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)—North Station Industrial Bldg., Inc., 150 Causeway St., Boston, Mass.

District No. 2 (Connecticut, New Jersey, New York)—641 Washington Street, New York, N. Y.

District No. 3 (Delaware, District of Columbia, Maryland; and the counties of Pennsylvania east of east county line of McKean, Cameron, Clearfield, Blair and Bedford)—Gimbel Bldg., 9th & Chestnut Sts., Philadelphia, Pa.

District No. 4 (Ohio; West Virginia; and the counties of Pennsylvania west of east county line of McKean, Cameron, Clearfield, Blair and Bedford)—311 Old Post Office Bldg., Columbus, Ohio.

District No. 5 (North Carolina, South Carolina, Virginia)—240 Post Office Bldg., Charlotte, N. C.

District No. 6 (Alabama, Florida, Georgia)—Standard Bldg., Atlanta, Ga.

District No. 7 (Kentucky, Mississippi, Tennessee)—222 U. S. Courthouse, Nashville, Tenn.

District No. 8 (Illinois, Indiana, Michigan)—826 U. S. Courthouse, Chicago, Ill.

District No. 9 (Minnesota, North Dakota, South Dakota, Wisconsin)—107 Federal Office Bldg., Washington and Third Ave. South, Minneapolis, Minn.

District No. 10 (Iowa, Kansas, Missouri, Nebraska)—Carbide & Carbon Bldg., 912 Baltimore Ave., Kansas City, Mo.

District No. 11 (Arkansas, Louisiana, Oklahoma)—906 Wallace Bldg., 105 Main St., Little Rock, Ark.

(TURN TO PAGE 190, PLEASE)

NEW, PATENTED HONE DOUBLES LIFE OF ANY BEARINGS



The main bearing hone lines up and perfects all bearings at one time.



Connecting rod bearings are made to fit right at your bench.

Keeps Oil Pressure Up

All shell type bearings when clamped into place have high spots which quickly crystallize and break out causing oil pressure trouble, and excess oil consumption. Now, with an easy operation, "J. P." Hones remove these difficulties by eliminating the high spots. In a few minutes either main or connecting rod bearings are fitted perfectly in their actual running position. Hence, the bearings last at least twice as long. Oil pressures are up after thousands of miles travel. Fewer units are out of service for repairs and maintenance costs hit a new low. There's nothing like the new, easy-to-use "J. P." Hones and they cost so little compared to the big savings they demonstrate every day. Clip the coupon now. It will be worth-while!

Please Send Free Literature and Prices

Name _____

Address _____

J.P. MANUFACTURING CO.
330 E. FRONT ST., YOUNGSTOWN, O., U.S.A.

When writing to advertisers please mention Commercial Car Journal

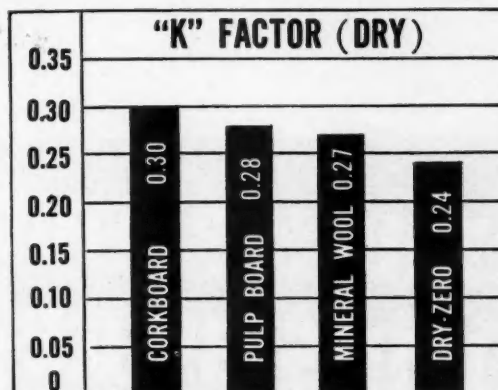
COMMERCIAL CAR JOURNAL
APRIL, 1941

"LOOK FOR ALL THREE" in your Truck Insulation



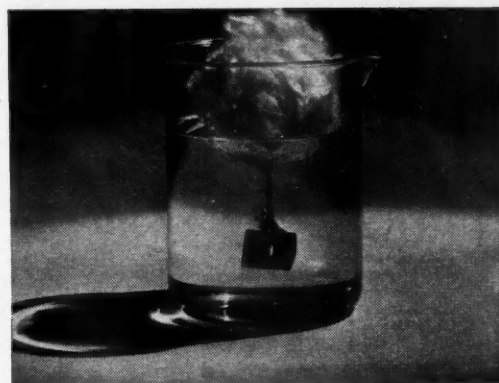
1 High Thermal Efficiency means LOWER REFRIGERATION COSTS

You can keep your truck refrigerating costs low by using Dry-Zero Insulation—established under test as the most efficient commercial insulant known. It has a "k" factor of 0.24 (as determined by impartial authorities). Dry-Zero Insulation is made of Java-grown Ceiba fibres whose resistance to heat penetration is extremely high. What's more, the heat-stopping efficiency of these fibres is further increased by a patented scientific process of "graining," which places the fibres across the line of heat flow.



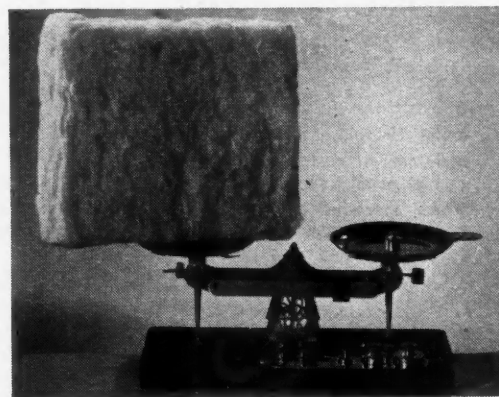
2 Moisture Repellence means LONGER USEFUL LIFE

Only an insulation that remains dry for its entire life will effectively retard the entrance of heat into your truck body. And that's just what Dry-Zero Insulation can do. It is by nature water repellent (non-hygroscopic) and sheds water like a duck. It will neither absorb moisture nor draw and hold it by capillary attraction. Properly installed, Dry-Zero Insulation retains its heat-stopping efficiency for the life of one body after another, and, in addition, it will not "settle," disintegrate, rot, or absorb odors of any kind.



3 Light Weight means LOWER TRUCKING COSTS

To carry the greatest possible payload and thereby reduce trucking costs, you must choose a lightweight insulation. Truck body insulants vary a great deal in weight, not only when new but after a few months of service. Some are naturally heavy. Others put on weight by absorbing moisture. In the new Bound-Batt form, Dry-Zero Insulation weighs only 1½ ounces per board foot, which is one-seventh as much as commercial corkboard. Furthermore, as Dry-Zero Insulation does not absorb moisture, it will remain as light in weight as the day it was installed, even after years of service.



You'll want to know more about Dry-Zero Insulation and how it can help you save money. A new folder, just prepared, is

yours for the asking. Merely write, Dry-Zero Corporation, 222 North Bank Drive, Chicago; or, 60 East 42nd Street, New York.



3 OUT OF EVERY 4 INSULATED TRUCKS USE

DRY-ZERO INSULATION

(Continued from Page 188)

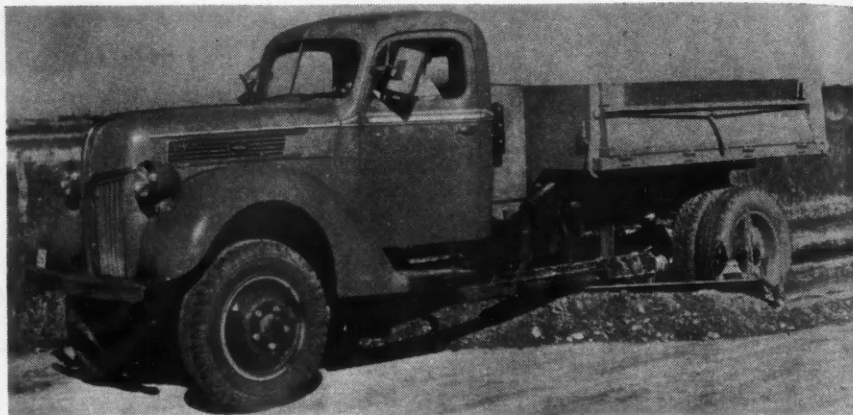
District No. 12 (Texas)—1109 Electric Bldg., W. 7th & Lamar Sts., Fort Worth, Texas.

District No. 13 (Colorado, New Mexico, Wyoming)—900 U. S. National Bank Bldg., Denver, Colo.

District No. 14 (Idaho, Montana, Utah)—430 Continental Bank Bldg., 200 South Main St., Salt Lake City, Utah.

District No. 15 (Oregon, Washington)—323 Pittock Block, Portland, Ore.

District No. 16 (Arizona, California, Nevada)—114 U. S. Customs Bldg., San Francisco, Calif.



The superior traction of all-wheel drive construction, Marmon-Herrington engineers point out, allows users to get the spring road work underway extra early—especially after the same equipment has winter snows out of the way

Raybestos Brake Service Guide

The third edition of the Raybestos Brake Service Guide, published by the Raybestos Division, Bridgeport, Conn., has been given increased importance by the inclusion of a new heavy-duty section. This section presents detailed diagrams and adjustment and maintenance information for all truck and bus brakes and braking systems, including booster and air installations. All this is in addition to similar material covering the latest passenger car brakes.

The Guide includes handy trouble shooting chart and a quick reference index of makes and models of trucks, buses and cars. Available through Raybestos dealers at 25 cents.

Railway Express Orders 2667 Vehicles

Expenditures totaling over \$4,000,000 for new automotive equipment have been authorized by the Railway Express Agency for a broad program of replacement and addition to the company's automotive facilities. Orders have been placed for 2667 trucks, tractors and trailers of specified design and capacities. Truck chassis and integral bodies are being built by separate manufacturers as the latter are of special design and all-steel construction.

George R. Meyercord

George R. Meyercord, age 65, Chicago, chairman and former president of Hascelite Mfg. Co., and member of the advisory board of the Illinois Manufacturers Association, died Feb. 22 in a New York City hospital. He organized the Meyercord Co., makers of decalcomania transfers in 1894, and the Vitrolite Co., and was president of the American Manufacturers Foreign Credit Underwriters and American Tariff League.

Eberhard Hardware Bulletin

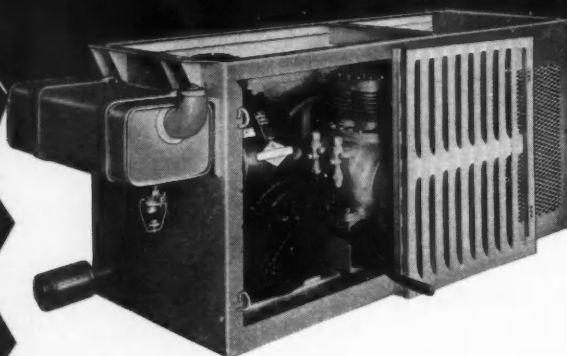
The Eberhard Manufacturing Co., 2734 Tennyson Rd., Cleveland, Ohio, has issued a new bulletin, No. 135, which illustrates and describes several new items in the company's line of truck body hardware. The bulletin supplements the regular catalog.

TRUCK REFRIGERATION UNITS BY ICE-O-MATIC

COMPACT

SIMPLE

STURDY



Far Less Expensive to Operate Than Common Types of Refrigeration

- Substantially lower operating cost.
- No time lost for refills.
- Maintains customary low temperature at all times without attention.
- All operating expense ends when unit is stopped.
- No left over cooling water to throw away.
- Fin or plate coils.
- Standard underslung mounting, internal mounting, or upper mounting.

The above illustration clearly shows the rugged simplicity of the Williams Ice-O-Matic Truck Refrigeration unit and the construction that makes it so well fitted to stand up under the exacting requirements of truck operation. Main frame is of 2" x 2" x 1/4" angle iron—arc welded to #12 gauge steel end panels. Picture shows piano hinged compartment door open.

Equipped with two self-locking door handles. Louvred panels, side and bottom, give full protection to the operating equipment. A complete compact gas engine unit—Overall dimensions: Length, 59 1/4, width 22 1/2, height 24 1/2.

**WILLIAMS OIL-O-MATIC
HEATING CORP.**

Bloomington, Ill.

**WILLIAMS
ICE-O-MATIC
REFRIGERATION**

Williams Oil-O-Matic Heating Corporation
Bloomington, Illinois
Refrigeration Division, Dept. C-4

Gentlemen: Please send me complete information on the Williams Ice-O-Matic Truck Refrigeration equipment.

Name

Address

By Whom

The
CONNECTING LINK
between
QUALITY and PRICE

Wiry Joe **BATTERY CABLES**

MADE TO TOP QUALITY STANDARDS . . . AND PRICED FOR GENUINE ECONOMY

You don't often find a top quality line at real money-saving prices. But that's what you get in Wiry Joe.

Every Wiry Joe Battery Cable has a full-gauge copper core with rugged, heavy-duty insulation . . . plus heavy terminals that prevent "bottle-necks" in the flow of current. Every item in the complete Wiry Joe line of automotive wiring has proved in actual fleet service that it delivers top-notch performance.

And as to price . . . Wiry Joe is produced by the biggest independent company in the industry, with direct control of manufacturing processes from start to finish. Result: a price schedule that brings substantial buying economies . . . and built-in quality that means more miles of service.



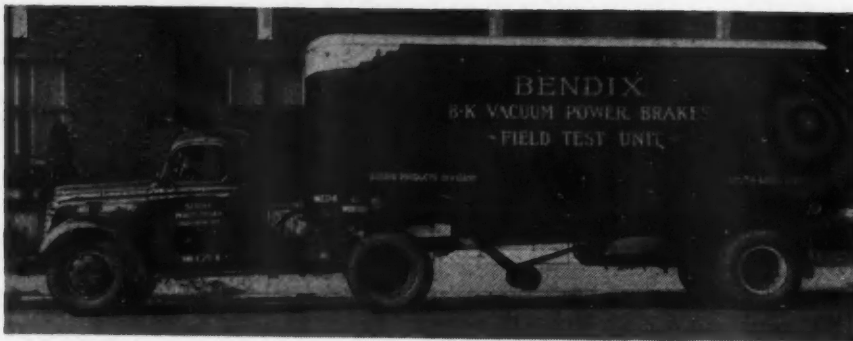
Wiry Joe

AUTOMOTIVE WIRING
 PRODUCED BY THE

DOSTAM METHOD

BY THE

CRESCENT CO. - Pawtucket, R. I., U. S. A. - Montreal, Canada

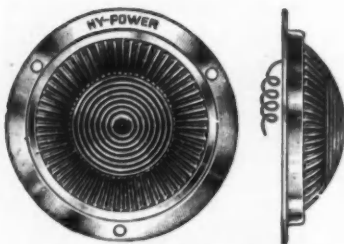


This tractor-trailer combination is a traveling laboratory from which Bendix engineers obtain much of the data on new designs of braking units

for RELIABILITY *plus* ECONOMY SPECIFY... **KING BEE**

A single failure on the part of Safety Equipment—a flare that blows out, a rear view mirror that becomes clouded—may mean a costly or even fatal accident. That's why *reliability* in safety accessories is of paramount importance.

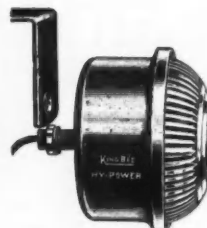
And it's the day in and day out *reliability* of King Bee Equipment that has made it the choice of the nation's leading fleets. Shown below are just a few of King Bee's tried and proven items. Send for a complete catalog and check up on *your* safety equipment . . . today! Safeguard against accidents *before* they happen!



Surface Mounted Lamp, Flat Type



Designed for top corners or sides of trucks, trailers or buses.



Stop and Tail Lamp.



Streamline Lamp on soft cushion pad. Fits any contour of roof corner on cabs and trucks.



The Indestructible Photo-Ray Reflector.



The only all metal Flexible Lamp made.



POSITIVE LOCKING LUG

NO THREADS TO CLOG WITH GUM

Lamps are available with either 5 or 6 C.P. bulbs for 6-8 or 12-16 V. systems.

PROTECTO MIRROR



Heavy Duty Universal Mounting. Attaches direct to body or to any size hinge. Covered by U. S. Pat. 2,869,595, 2,869,596, 2,869,597, 2,869,598, 2,869,599, 2,869,600, 2,869,601, 2,869,602, 2,869,603, 2,869,604, 2,869,605, 2,869,606, 2,869,607, 2,869,608, 2,869,609, 2,869,610, Canadian Pat. No. 356553. Others Pend. Beware of imitations.

ASK YOUR JOBBER OR WRITE FOR CATALOG

AMERICAN AUTOMATIC DEVICES CO.

Manufacturers of the Famous KING BEE Products

HARRISON, THROOP AND CONGRESS STREETS

CHICAGO, ILL.

Mechanics, Loaders, Helpers Now Under ICC Jurisdiction

The Interstate Commerce Commission has placed mechanics, loaders and drivers helpers of all motor carriers engaged in Interstate Commerce under its jurisdiction and thus automatically released this class of workers from the provisions of the Fair Labor Standards Act.

In deciding the long-debated questions of just what employees "effected safety of operation," the Commission divided motor carrier workers into these five classifications: (1) Mechanics and other garage workers; (2) loaders; (3) dispatchers; (4) drivers, and (5) drivers helpers. Of these classifications it already had jurisdiction over drivers and has now added mechanics (excluding painters, washers and other garage helpers who never perform actual repair work) loaders and drivers as at least indirectly effecting safety and thus subject to its jurisdiction.

The reasoning which the Commission has published is both informative and indicative of the thinking of its members.

Rejecting claims that it should assume jurisdiction over employees who devote "a few minutes a day" to clerical work which indirectly affects safety as "too broad," the Commission concluded its power was limited to employees "who devote a substantial part of their time to activities which directly affect safety of operation."

"Mechanics are required, for example," the Commission said, "to keep the lights and brakes in such condition. They perform many other duties, of course, but these are sufficient to show clearly that the duties of these employees do effect safety of operation directly, as it is obvious that a large motor vehicle without the required lights or adequate brakes is a potential hazard to highway safety. All witnesses testifying at the hearing agreed that the work of mechanics has such a direct and intimate relation to safety of operation, and no conflicting evidence was submitted."

"The record likewise clearly shows that the carefully supervised work of skilled mechanics is a most important factor in the prevention of accidents, and therefore in the promotion of highway safety. It is also true that there are so many highway accidents that even a small percentage covers a large number.

"We further recognize that, while on the average mechanics may be responsible for less than one-half of one per cent of highway accidents, the experience of many carriers must necessarily vary from the average. At the hearing, the witnesses generally represented large and well-managed carriers. It may well be that many other carriers are not as careful in selecting qualified mechanics and supervising their work as these large carriers, thus creating conditions which menace highway safety materially.

"Our conclusion is that mechanics devote a large portion of their time to activities which directly affect the safety of operation of motor vehicles operated in interstate or foreign commerce, and hence that we have power to establish qualifications and maximum hours of service for such employees."

In assuming jurisdiction over loaders, the Commission stated that the evidence "makes it entirely clear" that a motor vehicle must be properly loaded to be safely operated on the highways.

"If more weight is placed on one side of the vehicle than on the other," the Commission observed, "there is a tendency to tip when rounding curves. If more weight is placed in the rear of the vehicle, the tendency is to raise the front wheels and make safe operation difficult. Further, it is necessary that the load be distributed properly over the axles of the motor vehicle."

"The great majority, if not all of the carriers whose operations are of sufficient size or character to justify the employment of loaders, handle freight of such weight that proper loading is necessary.

"We conclude that loaders devote a large part of their time to activities which directly affect the safety of operation of motor vehicles operated in interstate or foreign commerce, and hence that we have power to establish qualifications and maximum hours of service for such employees."

The Commission divided "helpers" into two classes—those who drive part of the time and help in loading and unloading, and those who ride on the vehicle with the driver but never drive. Those who drive part time, it stated, may be classed as "drivers" and obviously subject to ICC jurisdiction.

"Helpers who never drive also have a direct bearing on safety and, therefore, subject to the Commission's authority, the decision stated. In this respect, the Commission pointed out that such helpers assist in loading and unloading; flag the driver across railroad tracks; place flags and flares in case of breakdown, and perform other similar duties affecting safety.

"As the great majority of trucks are operated safely with only one man on the vehicle," the decision stated, "we can not say that the presence of a helper is required, nor do our safety regulations so provide. It is clear, however, that the duties performed by a helper aid materially in the safe operation of a motor vehicle, and that they devote substantially all of their time to such work.

Pedal-controlled Vise



An automatic vise and clamping tool utilizing foot control has been placed on the market by the Automatic Vise Sales Co., 2845 Sunset Place, Los Angeles. A free-sliding movable jaw is pushed against the work and then clamped and released by foot pedals. The main clamping pedal gives enough pressure for general work, while an auxiliary pedal provides extra pressure for special jobs. The tool can be set for repetitive work by means of a simple adjustment.



This Fruehauf-built trailer train hauls 27 cu. yd. of sand or gravel each trip from the yard to the hopper. Twelve yards are on the tandem semi-trailer and 15 are on the sixteen wheel rear trailer. The chassis is a White.

DON'T GAMBLE!



Adopted by
leading
Truck
Manufacturers
and
Fleet Owners

More Than
Meets I. C. C.
Specifications

... play safe with
the four aces of ...

KING BEE

TRUCK EQUIPMENT

HY-POWER
PROTECTO
FOTO-RAY
ACE

LONG-LIFE
RUBBER
RIM
BREAK-PROOF

LAMPS
MIRRORS
REFLECTORS
FLARES

LEAK-PROOF

BUY FROM YOUR JOBBER

AMERICAN AUTOMATIC DEVICES CO.

Manufacturers of the Famous KING BEE Products

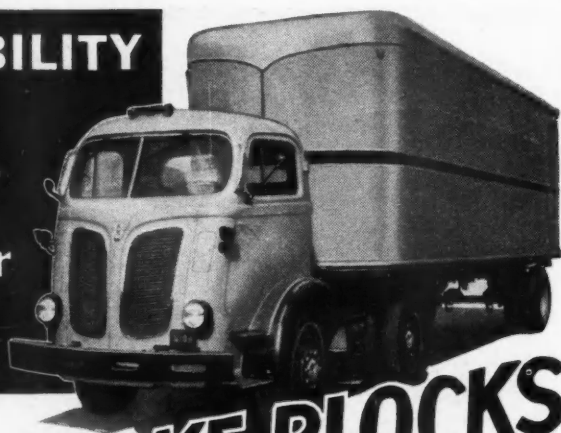
HARRISON, THROOP AND CONGRESS STREETS

CHICAGO, ILL.



Vice-president Henry P. Weckerle of Amherst Dairy Farms presents safety buttons to 10 of his drivers. The drivers are, left to right, Harold Southard, Elmer Bull, Edward Mauer, Elmer Heyer, G. J. Weckerle, Jr., Syl Hanel, N. Van de Mark, Thomas Minto, Louis Puff, Henry Hanel and President G. J. Weckerle

**DEPENDABILITY
STAMINA
LOW COST
Per Mile or
Per Stop**



GATKE BRAKE BLOCKS *Custom-Bilt* for **YOUR JOB**



Whether you operate trucks, tractors and trailers, or passenger cars, GATKE CUSTOM-BILT Brake Blocks offer the last word in *Safety and Low Maintenance*. Here's why!

- Correct balance between Primary and Secondary Shoes gives maximum power with smooth, quiet stopping.
- Constant holding power under all operating temperatures.
- No loss of efficiency on steep grades or in prolonged use.
- Long wear life gives better mileage with fewer adjustments and replacements.

Ask your GATKE Jobber or write us for information.



BRAKE BLOCKS & LINERS

GATKE CORPORATION 228 N. La Salle St., CHICAGO, ILL.

Introduced Moulded Brake Blocks for Automotive Service

Oil Company Head Scores Railroads

The unending attempt of the nation's railroads to obtain state legislation designed to impose "senseless restrictions on sizes, weights and equipment" of motor vehicles was scored heavily by J. Howard Pew, president of the Sun Oil Co. in his annual statement to stockholders.

The problem of highway financing becomes more exasperating, Mr. Pew pointed out, "when we consider that while motorists and the oil industry are scandalously overtaxed for highways, powerful influences persistently work to prevent these highways rendering their full service to the public."

"The railroads continue to fight against highway transportation," he continued, "and persist in the charge that their financial difficulties are largely due to highway competition. Under all sorts of pretexts they press for legislation, Federal and state, to cripple, or outlaw use of highways, particularly by commercial vehicles."

"Managerial energies that ought to be devoted to improving and popularizing railroad service are expended, at enormous cost, in this fight against trucks, legislatures are cajoled into imposing senseless restrictions on sizes, weights and equipment of vehicles, limiting their rights on the road, and setting up state barriers against them."

"Figures are recklessly distorted to make the public believe that the special taxes of highway users do not meet the cost of the roads, and that, therefore, general tax funds subsidize the motorists' highways."

"This is a peculiarly mendacious misrepresentation, as was proved by Hon. Joseph B. Eastman, Federal Co-ordinator of Transportation, in his able and conclusive study of the subject. He demonstrated that the special taxes paid by commercial vehicles much more than compensates for their use of the roads."

"As a matter of fact, the railroads protested for many years that their less-than-carload traffic was handled at heavy loss. Yet that is the very traffic of which the trucks have in part relieved them."

"There have recently been some cheering evidences that the public is coming to realize the truth, and vigorous protests have been sounded against the railroad propaganda and against the erection of interstate barriers."

"The railroads, however, continue their campaign of misrepresentation; and lawmakers and public administrators continue strangely susceptible to their arguments."

"There is some reason to hope that this anti-highway crusade will lose a good deal of its effectiveness in the legislatures this winter because of the popular realization of how vitally important transportation is in the preparation of national defense."

Although its sales and operations are said to be proceeding at a record pace, the Spicer Manufacturing Co., Toledo, reports the continued ability to supply its non-defense products in accordance with demand.

A Tip on Keeping Brake Fluid Clean

In the January 1941 issue of *COMMERCIAL CAR JOURNAL* there appeared an article entitled "Brake Fluid Facts For Fleets." This article was a pretty complete discussion of brake fluid, what it should do and how to handle it.

Lewis R. Gwyn, Jr., engineer, Railway Express Agency, read the article and concluded that *COMMERCIAL CAR JOURNAL* had missed one bet. His point is well taken and *COMMERCIAL CAR JOURNAL* welcomes his contribution to the discussion. Writes Mr. Gwyn:

"The article does stress the importance of keeping the fluid clean but aside from the desirability of running a clean shop, it does not suggest any particular precaution to assure the result. We have found that with most hydraulic brake installations, dirt is introduced at the time fluid is replenished. The top of the master cylinder is usually covered with plenty of road dirt as is the cap. The natural thing for a mechanic to do when he is adding fluid is to unscrew the cap and put it down on the most convenient surface—usually the lower flange of the frame side rail some grit from the top of the master cylinder falls in the fill opening and more is added when the cap is put back. Of course, cap and master cylinder should be wiped off with a rag before this operation is done but this precaution is apt to be overlooked.

"We have found that the installation of a reservoir tank which can be located on the front side of the dash or inside the cab whichever works out conveniently with the particular model chassis involved, eliminates nearly all the trouble from this source. The filling operation is located at a clean and accessible point and there is no tendency or excuse to get any dirt in the system when replenishing the fluid. Aside from the obvious advantage of keeping the brake system clean and bringing the filling operation out where it is accessible, we find that the use of the reservoir tanks eliminates a great many brake bleeding operations. By keeping the master cylinder constantly filled and with a slight head of liquid, air is kept out of the system.

"Of course, the idea is not new. The earliest hydraulic brakes had reservoirs and when the box-type master cylinder came out, the reservoir was abandoned as superfluous. While it can be dispensed with we think it worth its small cost."



This "Tropical Topic from Tampa" with fitting Florida background took first prize in recent Diamond T picture contest. A Kelvinator refrigerating unit maintains minus 10 deg. temperature in the Lindsay structure body



Here's part of a fleet of 50 Dodge job-rated trucks recently delivered to the Pennsylvania State Department of Highways. They'll be used for snow-removal in winter and for construction and improvement jobs in other seasons.

Here's MORE PROOF OF WHAT WE CLAIM!

HUEY MOTOR EXPRESS
GENERAL OFFICE
FLORENCE, KENTUCKY
PHONE 192

ALSO
40 KY.
ON KY.
LLE KY.
TOWN KY.
STOWN KY.
WATT OHIO

DAILY MOTOR FREIGHT
SERVICE TO POINTS
BEYOND, IN EITHER
DIRECTION, BY
CONNECTING LINES

January 2, 1941

Mr. John B. Kingham, Vice Pres.
Kingham Trailer Company, Inc.,
Louisville, Ky.

Dear Mr. Kingham:

We want you to know just how well pleased we are with the new light weight Kingham Zephyrs we recently purchased from your company.

Before purchasing the Zephyr we carefully compared it with other makes of popular trailers and concluded that the Zephyr X-braced frame together with the rubber mounted alignment features, the new mountain type heavy duty brake, and the streamline supports with compound gears, gave it a distinctive advantage over any other make on the market today.

Seven months have now passed since we purchased our first Zephyr and I wish to assure you that it has performed most satisfactorily. The Zephyr is all that you claim for it. It is of superior construction, light in weight, dependable, durable and serviceable.

With all good wishes for your continued success,

Sincerely yours,
HUEY MOTOR EXPRESS
W. R. Huey
W. R. Huey.

KINGHAM TRAILER COMPANY
INCORPORATED
LOUISVILLE, - - - KENTUCKY

MAIL THIS COUPON TODAY!

KINGHAM TRAILER CO., Inc., 15th and Hill Sts., Louisville, Ky.

Gentlemen:—We are interested in your new light-weight Zephyr trailer.
() Please send us descriptive folder. () Please have your representative call on us.

NAME COMPANY

CITY STATE CCJ.

MORSE MORFLEX COUPLINGS AND DRIVE SHAFTS

**IMPROVE
PERFORMANCE****4 WAYS!**

1. TRANSMIT POWER
MORE EFFICIENTLY!
2. REDUCE VIBRATION!
3. REDUCE WEAR!
4. ELIMINATE
LUBRICATION!

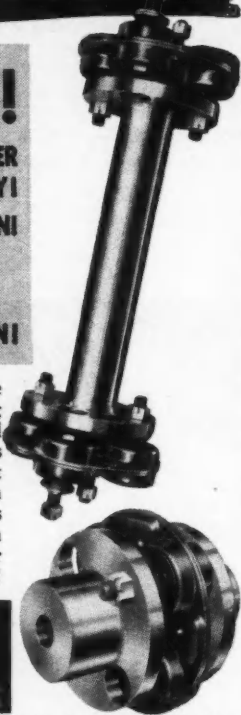


● Morse Morflex Couplings and Drive Shafts are indispensable in attaining best performance. They cushion and absorb both starting and driving shocks—reduce friction, wear, and transmit power more efficiently. No lubrication is required. Take advantage of this superior driving medium. It means an actual cash saving for you! Write for further details today. No obligation!

MORSE

COUPLINGS AND DRIVE SHAFTS

MORSE CHAIN CO., DETROIT, MICH., ITHACA, N. Y., DIVISION OF BORG-WARNER CORP



"He says the first steps in Spring
tune-up are Gunk and Motor Fizik"

THE CURRAN CORPORATION

Manufacturing Chemists
MALDEN, MASS.

COMMERCIAL CAR JOURNAL

Is Read by the Men Who Buy for the 25,000
Largest Truck Fleets in the Country. The
Truck Fleet Market is Big, Compact, Acces-
sible—and it Has the Money to Spend.

COMMERCIAL CAR JOURNAL

A Chilton  Publication

CHESTNUT & 56th STREETS

PHILADELPHIA, PA.

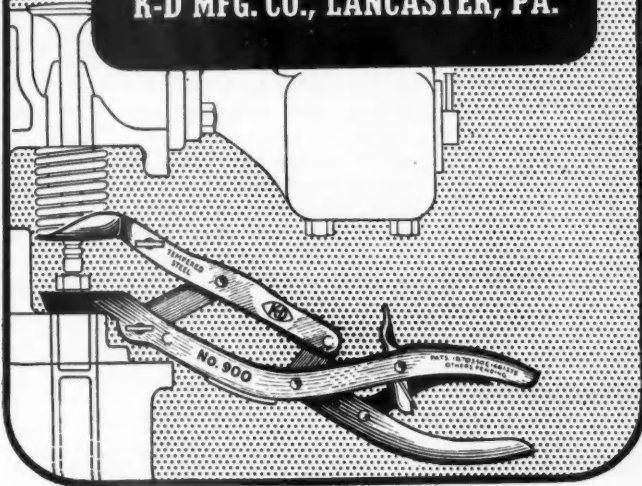
When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941

The Right Lifter

for under fender use on late motors. Only $8\frac{3}{4}$ " long... total parallel lift 3". Hardened, adjustable jaws, safety ratchet lock. \$2 list... ask your jobber for dealers' net price.

K-D MFG. CO., LANCASTER, PA.



FOR LOW COST MAINTENANCE

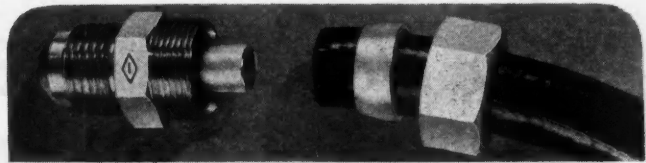
Specify
BLOOD BROTHERS
UNIVERSAL JOINTS

Whatever your requirements, if your problem is to transmit power at an angle, our field and factory experience of more than 30 years is at your command. Our Engineering Department will gladly submit quotations covering your requirements.

BLOOD BROTHERS
MACHINE COMPANY
DIVISION OF STANDARD STEEL SPRING COMPANY
ALLEGAN • MICHIGAN

COMMERCIAL CAR JOURNAL
APRIL, 1941

When writing to advertisers please mention Commercial Car Journal



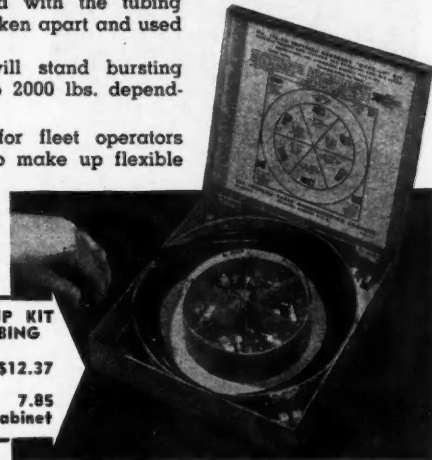
IMPERIAL NEOPRENE TUBING and FITTINGS

for making up flexible lines for oil filters

THREE piece fitting easy to assemble. After being used with the tubing the fittings can be taken apart and used again.

Neoprene tubing will stand bursting pressures of 1200 to 2000 lbs. depending on size.

● Inexpensive kit for fleet operators makes it possible to make up flexible lines of any length for oil filter installations where standard replacement lines are not available.



No. 115-FN MAKE-UP KIT OF NEOPRENE TUBING AND FITTING

List price of contents \$12.37
Net price to fleet
owner..... 7.85
No charge for steel cabinet

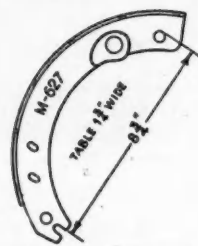
THE IMPERIAL BRASS MFG. CO.
1209 W. Harrison Street, Chicago, Illinois

IMPERIAL Automotive Products

TUBE FITTINGS • FLEXIBLE TUBING • TUBING SERVICE TOOLS
FREEZETESTERS • BATTERY TESTERS • WELDING OUTFITS AND SUPPLIES

"The Brake People"
BRAKE LININGS • BRAKE SHOES • BRAKE PARTS
MILEY

**REDUCE LIABILITY BY BRINGING
YOUR BRAKES UP-TO-DATE**



Above, MILEY No. 627 Brake Shoe for 1934-36 Chevrolet Master and $\frac{1}{2}$ ton trucks.

● Because commercial vehicles are habitually overloaded, travel faster, travel farther and stop oftener, fleet operators are faced with the problem of keeping braking power up with traffic requirements. To meet the need for increased "stopping power" MILEY has developed the new high friction EBONITE Brake, Blocks and Lining. This new zinc wire resin base lining gives 2 wheel brakes, "4-wheel" stopping power, and 4-wheel brakes power brake performance.

Alone or in matched sets with BLACK GOLD (the metal device carbon lining) depending on types of brakes, it will give long, safe trouble-free service—increased stopping power, greater mileage, fewer adjustments and a "soft" pedal action (believe it or not) all the way.

Write for Samples and Catalog Sheets

GOOD BRAKE LINING

L.J. MILEY co.

CHICAGO • U. S. A.

1062 W. ADAMS ST., CHICAGO, U. S. A.

Clean Floors Right and Save Plenty in The Bargain



GET THE FACTS THAT PROVE IT

Write for your copy of this new collection of performance data in which users of Magnus Cement Cleaner and other Magnus Automotive Cleaning Specialties tell about the results they are now getting compared with previously used methods and materials.

Oily, greasy floors and driveways are dangerous, needless—and mighty poor advertisements for you.

Get 'em clean and keep 'em clean . . . really clean . . . with

MAGNUS CEMENT CLEANER

It is not only easy to use and easy on the cement surface. It actually adds service life to your floors and whitens them as well as hardening them. You get cleaner floors than you ever had before and you save plenty in the bargain, because the reported experience of users is that Magnus Cement Cleaner goes two to four times as far as ordinary cleaners.

Remember that it is safe. There's never any excuse for using dangerous gasoline for floor cleaning.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants.

38 South Avenue

Garwood, N. J.



MAGNUS CLEANERS

AIR?

You'll Have All You Need for Every Service Job With This **CHAMPION COMPRESSOR**

Delivers 14.4 Cubic Feet Per Minute at 200 Pounds Pressure

It takes plenty of air to keep shop jobs moving on schedule, to hold down job time and costs and keep fleet units rolling. You can be sure of a continuous, high pressure air supply with this Champion OE-423-80 two-stage compressor because it is built to operate multiple installations of air lifts, pneumatic greasing systems, bus and truck tire lines, grease guns, spring oilers, etc., etc.

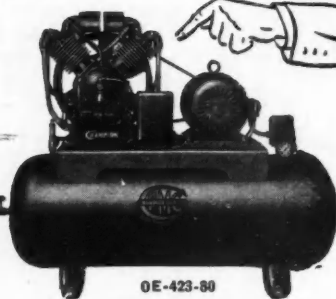
The four cylinder "V" type compressor design of the OE-423-80 assures you many years of smooth, quiet operation with minimum wear and "rock bottom" operating costs.

GET THE FACTS ABOUT COMPRESSORS NOW!

WRITE NOW for Compressor Facts that can mean many years of savings for you! The Champion Line includes compressors with from 1/4 to 15 H.P. motors. Also ask for data on 1 to 4 gun Champion Car Washers.

CHAMPION PNEUMATIC MACHINERY CO.

8160 South Chicago Ave., Chicago, Ill.



OE-423-80

Money Saving Features of the OE-423-80

This CHAMPION Two Stage Air Compressor is the choice of so many Fleet Operators because of: Non-corrosive plate valves . . . Totally enclosed crankcase . . . Totally enclosed centrifugal unloader . . . Angular ball bearings . . . And many other features which mean . . . QUIETNESS . . . ECONOMY . . . LONG LIFE.

Priorities Will Not Curtail Car Output

Although defense is the automobile industry's primary concern, priorities and shortages of materials do not predict an interruption in the production of vehicles, according to Paul G. Hoffman, president of The Studebaker Corp. Rather, they simply mean a new challenge to the ingenuity of the automotive engineer, Mr. Hoffman said last month, at a meeting of Studebaker distributors and dealers held in Chicago. Defense needs may alter, but not strangle, the nation's cars. Aluminum pistons may give way to cast iron, but they'll be excellent pistons. Radiator grilles may not be die cast, but they will be just as full of glitter. Body sections may be welded by a different process but they will be as strong, as sturdy, as sleek and streamlined. Mr. Hoffman said automotive engineers welcome the challenge as part of their contribution to the nation's defense.

"As long as we have steel, we'll have automobiles," said Mr. Hoffman. "Defense needs are going to make new demands, are going to make the engineers work harder. We'll have to make changes in designs, production machinery and the cars themselves. These things won't be simple to accomplish, but they are not too difficult. Engineers have been faced with similar 'crisis' for years; it's just a part of the job, an everyday problem that can be licked.

"We have heard, unofficially, that zinc priorities will be ordered. That might mean new radiator grilles, perhaps grilles made of steel. That wouldn't be a heart-breaking change; many engineers don't care for the garish grilles anyway. Moreover, they will make grilles of steel and chromium plate them. They would look just as bright. They might have to use plastics for interior hardware, steering wheel spokes and any number of things. Why not? Plastics are splendid materials and they look beautiful.

"Maybe the industry will have to change from tool steels based on tungsten to tool steels based on molybdenum. Okay, we can do it. We won't have any difficulties in the long run; just temporary problems. Magnesium priorities have been invoked, causing consternation among the uninitiated, but the use of magnesium in cars is relatively negligible. Engineers haven't lost any sleep over it.

"Engineers are trained by education and experience to take such problems in their daily work and solve them. The public does not need to worry about its future motoring. As long as we have steel, we'll have cars, and better ones, too."

Blankley District Manager

W. Houlton Blankley has been appointed district sales manager of the accessories division of Stewart-Warner Corp., according to an announcement made by George Zahn, accessories division manager. His duties will consist largely of supervising the national accessory servicing training schools conducted by the division, and aiding in the distribution of the industrial tachometer.

Gray Warns of Prohibitive Highway Tax Burdens

Highway costs may increase to the point where great numbers of highway users will be forced off the roads. The charge for using the highways of the nation may become so excessive that the average low-income citizen will be unable to own and operate a motor vehicle. This warning was sounded recently by Chester H. Gray, director, National Highway Users Conference, speaking in Columbus, Ohio, at the annual convention of the Ohio Petroleum Marketers Association.

"There is a genuine danger that highway costs may increase to this extent," declared Mr. Gray, "and if this undesirable development should occur, it would have calamitous effects all along the line of the industries and occupations which are related to highway transportation.

"At the present time many state legislatures are in session," said Mr. Gray. "In each of these legislative assemblies, efforts are being made to increase taxes, fees and charges which highway users must pay. Fortunately, great aggregations of highway user organizations are militantly opposing measures which will increase the cost of using the highways beyond their present too-high level, so far as the low-income citizen is concerned.

Kimble-Imperial Cooperate on New Battery Testers

Announcement has been made that two manufacturers, The Imperial Brass Mfg. Co. and the Kimble Glass Co., are co-operating to produce and distribute a new and finer line of battery hydrometers and anti-freeze testers to be known as Imperial "K" Testers.

Both companies have for years manufactured such testers independently and each concern will retain its own identity and their other products will not be affected by the collaboration. The first models of the new line are to be shown very shortly.

ATA Urges ICC to Deny Railway Express Carrier Rights

J. Ninian Beall, general counsel of the American Trucking Associations, Inc., has filed a petition with the ICC urging that body to refrain from granting the Railway Express Agency rights to perform motor carrier operations pending a thorough study of the issues involved.

The petition challenged the claims that
(TURN TO NEXT PAGE, PLEASE)



According to its owners this Mack-Lanova diesel-powered unit is hauling a gross load of 50,000 lb. between a refinery in Wyoming and Salt Lake City, a distance of 635 miles. It makes the round trip in about 20 hr.

COMMERCIAL CAR JOURNAL
APRIL, 1941

When writing to advertisers please mention Commercial Car Journal

DOLE VACUUM COLD PLATES

Maximum Refrigeration Efficiency

For
Better TRUCK
and TRAILER
refrigeration

NEW YORK BRANCH
601 WEST 26th STREET
NEW YORK CITY

FOR COMPLETE INFORMATION AND
CATALOGS • WRITE DEPT. CCJ-A41

DOLE REFRIGERATING COMPANY
5910 North Pulaski Road • Chicago, Illinois



The principal advantages of Butane as a motor fuel for tractor, truck and stationary use are low fuel costs plus definite reductions in engine maintenance, oil consumption, etc.

Butane properly carburetted, burns clean and dry without carbon, crankcase dilution or foul exhaust odors.

ENSIGN Carburetion equipment is accurately designed to obtain the most from Butane and to meet every engine need with extra performance in power and economy of operation.

Operators report savings up to 1¢ per mile, reduction in maintenance costs from 25% to 40%,—25,000 miles between oil drains, smoother operation, etc.

Successful Butane carburetion and its adaptation is a direct result of extensive engineering research. ENSIGN, with 30 years of carburetor building experience, has a half-million dollar laboratory and manufacturing plant, with dealers throughout the United States.

ENSIGN
CARBURETOR CO., LTD.
HUNTINGTON PARK, CALIF. • DALLAS, TEXAS • CHICAGO, ILL.

Write us for complete information. Our competent engineering staff is at your service.

SHORT CUTS to SAVINGS through OAKITE cleaning

For Example:

MAKING COOLING SYSTEM CHECK-UP JOBS EASIER, AT LESS COST

To save money on your annual Spring cooling system check-up jobs, do what so many other fleet operators are doing . . . clean out "Winter-weary" cooling systems with **SAFE**, fast-working Oakite Penetrant! Method is thorough and easy! Simply drain anti-freeze and refill system with Oakite Penetrant solution . . . run motor for 30 minutes . . . then drain and flush. Loose scale, dirt, grease and other deposits are removed without harming metal surfaces or hose connections. Motor runs sweeter. And the cost? Surprisingly low!

Write for **FREE 36-Page Booklet**

FREE 36-page booklet giving many more money-saving Oakite cleaning tips, is yours on request. Write today!

OAKITE PRODUCTS, INC., 26D Thames St., NEW YORK, N. Y.
Representatives in all Principal Cities of the U. S. and Canada



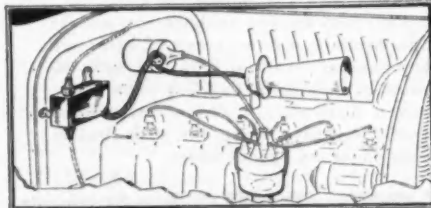
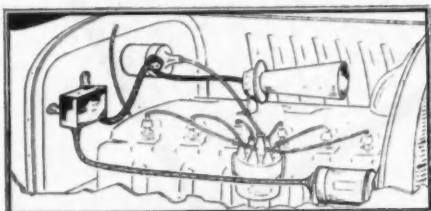
OAKITE
MATERIALS METHODS SERVICE



CLEANING
FOR EVERY CLEANING REQUIREMENT

Safety BECOMES A TANGIBLE ASSET!

It's true that you can't place your finger on any one thing and call it "safety" but, with the installation of a **SAFETY SPEED MOTOR CONTROL** or a **SAFETY SPEED VEHICLE CONTROL**, "safety" no longer remains an abstract quality but becomes a concrete reality.



The **SAFETY SPEED MOTOR CONTROL**, driven by the generator, regulates the RPM of large truck units with no restrictions on power or efficiency.

The **SAFETY SPEED VEHICLE CONTROL**, driven by the speedometer cable and operating in conjunction with the ignition system, regulates the rolling speed of light trucks and delivery units.

Efficient, economical in performance, both controls more than pay for themselves in the reduction of waste and the minimizing of physical hazards. Average installation time for most units is less than one hour.

for themselves in the reduction of waste and the minimizing of physical hazards. Average installation time for most units is less than one hour.

Write for complete information **TODAY!**

SAFETY SPEED CONTROL COMPANY
4242 W. CHICAGO AVENUE, CHICAGO, ILL.

(CONTINUED FROM PAGE 229)

the truck operations of Agency in conducting its express business are "different" from truck operations performed by independent motor carriers.

On the strength of the bare statement that its truck operations were different, the petition adds, the Express Agency was asking the ICC to waive the usual showing of public convenience and necessity and automatically grant it certificates to perform truck operations "without limitations or restrictions."

Objecting to such action by the Commission the petition requested that none of the Agency's motor carrier applications be approved until the Commission had determined:

1. What class or classes of business properly may be embraced in the term "express business."

2. What restrictions and limitations should be applied in order to confine the Agency's operations to that class of business which may be found to be embraced in the term "express business" as distinguished from ordinary motor carrier business.

3. Under what circumstances if any may railroads acquire duplicate motor carrier rights "under fiction of separate corporate entities involving railroads rail owned or controlled truck operations, rail owned express agencies and rail owned forwarding companies."

The railroads own the Railway Express Agency the petition adds, and those same railroads apply to the ICC for motor carrier operating rights in their own names and also in the name of subsidiary motor carrier and forwarding companies.

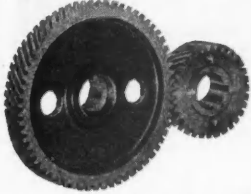
Riss & Co., Inc., Kansas City, Mo., interstate haulers, have placed an order for sixty, stainless steel Fruehauf trailers. The present order will give their fleet more than 100 of these units, making it one of the largest stainless steel fleets in the country.



Huston Brown, vice-president of the Joyce-Cridland Co., caught this 334 lb. Blue Marlin in one hour and 17 minutes. He has a good chance at several trophies for the season's biggest catch

CLOYES

For Efficient Fleet Operation



During the approaching tune-up season replace those worn-out timing gears with CLOYES... the TIMING GEARS engineered for split-second accuracy in operation.

CLOYES... the gears DESIGNED to LAST!
CLOYES GEAR WORKS
 17214 Roseland Road, N. E., CLEVELAND, OHIO

Be Sure to Specify AMERICAN BOSCH Fuel Injection Equipment FOR DIESEL ENGINES

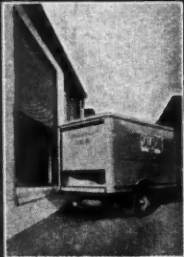


AMERICAN BOSCH CORPORATION
 Springfield, Mass. New York, Chicago, Detroit.

KINNEAR TRUCK DOORS

Also Doors for Buildings

ALL METAL
 ... Coils like a
 window shade, out
 of the way ...
 CONVENIENT
 BURGLAR PROOF
 FIRE PROOF
 MORE DURABLE



Write for Details
 The KINNEAR
 Manufacturing Co.
 2100-20 FIELDS AVE.
 COLUMBUS, OHIO
 Factories: San Francisco, Cal., and Columbus, Ohio

DUPLEX TRUCKS

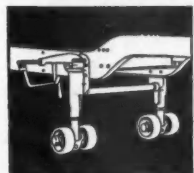
BUILDERS OF
 HEAVY DUTY
 AND SPECIAL TRUCKS

ALSO
 GENERATING SETS

DUPLEX TRUCK CO.
 LANSING, MICH.

AUSTIN

THE ACCEPTED STANDARD...

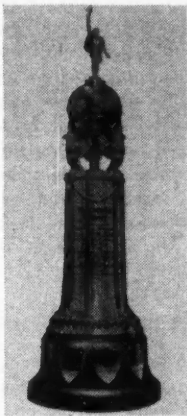


A complete line of **LANDING GEARS**... HORIZONTAL, VERTICAL and FOLDING TYPES.

Write for complete information on "SAFETY PROPS" and FIFTH WHEELS.

AUSTIN

TRAILER EQUIPMENT COMPANY MUSKOGON MICHIGAN



Here's the handsome Trailmobile Safety Trophy, awarded each year by Trailer Co. of America to the fleet which has done most for highway safety. Last year it went to Horton Motor Lines, Charlotte, N. C.

"What You Don't Know Can Hurt"

"What You Don't Know Can Hurt!" is the title of an excellent booklet just published by the National Council of Private Motor Truck Owners, Inc. In dramatic form, the booklet outlines the advantages of Council membership for all who own or operate private trucks whether the number be five or 50. It's well worth the price of a penny post card addressed to the Council's headquarters at 1075 National Press Building, Washington, D. C.

Red Ball Truck Driver Effects Dramatic Rescue

W. F. Bryant, veteran driver for the Red Ball Motor Freight Lines of Dallas, Texas, will not be soon forgotten by a group of helpless bystanders, and in particular, the near victim whose life he saved by snatching him from death in a burning gasoline truck loaded with 1000 gallons of gasoline following a collision with a passenger car in which three persons were killed. Bryant, while on his regular run between Beaumont and Dallas, arrived at the scene of the accident to find truck and automobile in a twisted mass of wreckage and the cab of the truck in flames. Bystanders were attempting to extinguish the flames by throwing sand in a losing battle. From the light of the flames the driver could be seen penned underneath the steering wheel, helpless to free himself. The cab was so smashed and twisted as to prevent immediate rescue attempts. Bryant succeeded in checking the flames with his fire extinguisher, then

(TURN TO NEXT PAGE, PLEASE)

Handy SUPER SERVICER

Complete, FAST BATTERY SERVICE

HANDY SUPER SERVICER is a combined Tester, Booster and Quick Charger. Compact. Portable. Tests battery in 1 min.; charges automatically at tapered rate resulting in FAST, yet SAFE, charging; battery remains in car; charging rate, 75 amps.; 115 or 230 volts. (Specify voltage when ordering.)



\$180.00

Complete with Bulbs, Leads and Clips.

ASK FOR BULLETIN 86
BALDOR ELECTRIC COMPANY
 4340 Duncan Ave., St. Louis, Mo.

TRADE MARK Noc-OUT HOSE CLAMPS



THE HOSE CLAMP WITH THE THUMB SCREW
 Use Noc-Out Hose Clamps... the standard of the automotive industry, for quick tightening, perfect all-around seal on your hose connections. They have the extra margin of strength which makes them the leading automotive hose clamp. Type "A" Adjustable—will fit many hose sizes. Type GBB, solid band, heavy duty clamp for Booster Brakes. GHH for all types of heater hose.

WITEK MFG. CO.
 4305 W. 24TH PL., CHICAGO, U.S.A.

OSHKOSH

4 Wheel Drive Trucks

A proven product. 1½ to 10 ton capacity. Write for complete information.

OSHKOSH

Motor Trucks, Inc.

Oshkosh, Wis.

NOW Available for Motor Trucks!

Write
 for
 Literature



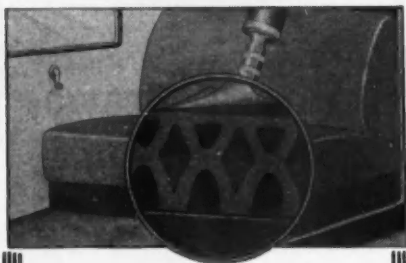
L & H Wheel Balancing Weights

Truck tires can now be protected the same as automobile tires against "spotty" wear caused by shimmy, wobble and wheel tramp. The new L & H heavy duty weights for trucks (Patent No. 2036757) fit all sizes of truck wheels. Easy to apply and easy to remove for adjustment. Ask your jobber.



HARLEY C. LONEY CO., 16980 Wyoming, Detroit, Mich.

Karpex All-Rubber SEAT CUSHIONS Cut Costs to the Bone



Truck owners the country over are profiting from the use of Karpex Black Diamond seat cushions and back rests. Their superior heavy-duty diamond grid construction is the result of years of research. This exclusive scientific design combined with specially processed semi-sponge rubber guarantees extra-long life, eliminates upkeep expense and helps prevent driving fatigue. There's sizes to fit every truck. Get complete facts and prices today.

KARPEX MANUFACTURING CO.
1424 E. 19th Street, Indianapolis, Ind.

LITTLE GIANT AUTOMOTIVE TRUCK EQUIPMENT TEN WHEELERS for 1½ to 5 Ton Trucks



Greater tonnage . . . more profit. Increase carrying capacity up to 20 tons. Extend frame to any desired length. Load kept in perfect balance . . . no teeter or end-away. Simple, sturdy, no intricate parts. Timken bearings; steel castings; hydraulic brakes. Easily installed in 3 hours. 3 sizes. **LOW COST.**

ONE OF THE PIONEERS

Also makes Little Giant Frame Extensions, Hand Hoists, Wrecking Cranes.

Write for Circulars, Low Prices

LITTLE GIANT PRODUCTS, INC.
1532 No. Adams Peoria, Illinois

(CONTINUED FROM PAGE 231)

backed his truck up to the cab of the smoking truck, hooked his tail-gate chain on to the door, snatching the door away and permitting the driver to be removed from the wreckage and placed in the waiting ambulance along with the other victims. Bryant then dusted his hands, climbed in his cab, and proceeded on schedule. Had witnesses not reported the incident, it is doubtful if this story would be known.

Major Bowes Plugs Trucks

On March 6, Major Edward Bowes took time out from his usual job of selling Chrysler-built passenger cars and devoted the commercial part of his radio program to tell the public what an important part trucks play in their lives even though they do not own or drive one. The Major called attention to the fact that milk, newspapers, fresh produce and many other commodities are brought to market and to the householder's door by truck and that trucks supplement transportation by water, air and rail.

Major Bowes also called truck drivers the best, the safest, and the most courteous drivers on the road.

Refunding of Road Bonds Urged as Economy Measure

Refunding of outstanding highway bond issues to obtain the prevailing low current interest rates where practical was suggested today by the American Petroleum Industries Committee, as a means of governmental economy. Sound highway finance, it was declared, also requires the substitution of a pay-as-you-go policy for the obsolete bond issue method of going into debt for roads.

"Highway bonds currently outstanding total \$2,000,000,000, and many of these issues bear the high interest rates prevalent years ago," the committee said. "Today a substantial saving to taxpayers could be effected through the refunding of some of these bond issues at the low interest rates now prevailing."

Petroleum Reserves Up

An estimated increase during 1940 of more than a half-billion barrels in the proved petroleum reserves of the United States, lifting the Jan. 1, 1941, total to a new high of 19,024,515,000 barrels, is reported by the American Petroleum Institute's Committee on Petroleum Reserves.



Heavy galvanized wire suspended from rings which slide on a round track. "Chain Link" weave as is used in best quality fence. Protects against theft and loss. Easy to open and close. Weave collapses within itself, saving space. Rigidly made for long, hard service, yet it is so light in total weight that average gate weighs only 90 lbs. Easily installed by owner's men. Satisfaction guaranteed. Quantity Discounts—Distributors Wanted.

ATLAS FENCE COMPANY
Richmond St. & Castor Ave., Philadelphia

Available Trucks

Builders of fine Motor Trucks, Tractors, Trailers and Buses since 1910.

Capacities from 1½ to 10 tons.

Write for bulletin

AVAILABLE TRUCK COMPANY
2501 Elston Ave. Chicago, Illinois

FRINK SNO-FLOWS

Both "V" TYPE and
ONE WAY BLADE TYPE

hand or power hydraulic control

FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS

Write for catalog 38AC and 38BC with discount to truck dealers.
CARL H. FRINK, Mfr., CLAYTON, 1000 1st., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-FLOWS OF CAN. Ltd., TORONTO, ONT

THE Decalcomania that is . . .

FIRST in { APPEARANCE
ECONOMY
DURABILITY

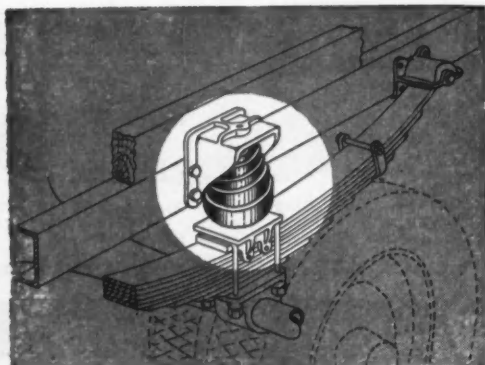
Permalux "KOLORFILM"

PERMALUX "KOLORFILM" decals offer greater durability and economy in application and maintenance. Completely synchronous with modern truck finish, they last longer . . . look better!

IT'S MADE OF DuPONT "DULUX"

Write TODAY for details.

THE PERMALUX COMPANY
900-10 West Lake St., Chicago, Ill.



Extra Payload without Penalty!

With its unique cushioning action **BODY BUOY** floats the extra load without additional strain on the center bolts or U bolts of the main spring. There's no

burdensome extra weight—pair of springs weigh less than 20 lbs.—yet capacity is greater than ordinary Helpers. Proven by thousands of vehicle owners. Installed with a few simple tools. Your Dealer has or can quickly secure Body Buoy for virtually any vehicle.

Write for Literature—stating make, year, body and capacity of Job.

BORDICK BODY BUOY

The AUXILIARY Spring that FLOATS the load

BORDICK STEEL PRODUCTS, INC.

COMMERCIAL DIVISION
537 ORLEANS DETROIT, MICH.

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
APRIL, 1941



HERE IS SNOW PLOW
BULLETIN 829. SEND
FOR IT.

BIG FLEET OWNERS CHOOSE BAKER SNOW PLOWS

Nationally known industries such as Ford Motor Co., General Electric Co. and Eastman Kodak Co. own Baker Snow Plows. They are used by America's largest cities, State Highway Departments and important federal

institutions. The widespread use of Baker Plows from coast to coast for over 32 years is evidence enough that your selection of any of the 21 models will be a sound purchase.

THE BAKER MFG. CO., 571 Stanford Ave., Springfield, Ill.

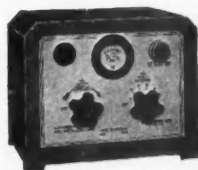
BAKER SNOW PLOWS

Dart Trucks

HEAVY DUTY FOR
OFF THE HIGHWAY SERVICE

— Specially Designed for —
Coal Mining—Iron Ore Mining—Copper
Mining—Pit and Quarry—Logging—Oil
Fields—Etc.
It Costs No More for Trucks Specially
Built to Fit Your Needs. Have Our Engi-
neers Visit and Analyze Your Operation.

DART TRUCK COMPANY
KANSAS CITY, MO.



BUY NO

**BATTERY
CHARGER**

Until You Have
Investigated The

VALLEY SUPERDUTY CHARGER

Eliminate Run Down Batteries for Low Cost Battery
Mileage. The new, improved, Valley-Guaranteed
(two years) charger connects to the lighting cir-
cuit . . . is easy and economical to operate . . .
no moving parts. Now it is easy and inexpensive
to obtain long battery life by maintaining efficient
battery charge.
Model SG-12 charges 1 to 12 volt
batteries.

NOW ONLY \$28.00

VALLEY ELECTRIC CORP.
4221 Forest Park Boulevard St. Louis, Mo.



— More Profits
per Job with
HEIL

Bodies and Hoists

Safe — dependable — complete line for
all types of service. Ask for free catalog.

THE HEIL CO.

Milwaukee, Wisconsin Hillsdale, New Jersey

Hoists — Bodies — Tanks — Road Scrapers — Snow Plows
Bottle Washers — Dehydrators — Oil Burners — Water Systems



AMA Asks Modification of Canadian Customs Laws

Modification of Canadian customs regu-
lations so that U. S. motor carriers will be
accorded the same privileges as American
railroads in serving points in the United
States through Canada, was urged by the
Motor Truck Committee of the Automobi-
le Manufacturers Association in a com-
munication from Robert F. Black, chair-
man of the committee, to Secretary of State
Cordell Hull.

The committee points out that modifica-
tion of the customs regulations would en-
able the motor carriers to shorten their
running time considerably between mid-
west points and upper New York State by
using the shorter route through Ontario.

A similar position has been recorded
with the Secretary of State by the govern-
ors of the several states affected, as well
as representatives of shipper and carrier
groups.

"The facts indicate," said Mr. Black, "that
highway mileage between Buffalo and
Detroit on heavily traveled highways in the
United States is 365 miles; a distance be-
tween the two points through the Province
of Ontario is 261 miles, or a net saving of
104 miles; between Buffalo and Port
Huron, Michigan, the saving is 210 miles.

Frank S. Barks Dies

The death of Frank S. Barks, president
of Lincoln Engineering Co., St. Louis, has
been announced by the officials of the
company. Mr. Barks left St. Louis on
December 26 for an extended trip to South
America, and was returning by steamship
when death occurred January 27, as a re-
sult of cerebral hemorrhage. He was 58
years old and had been active in his busi-
ness and social affairs until within four
weeks of his departure for South America.

TAPERED ROLLER BEARINGS

Tyson

ROLLER BEARING CORP.
MASSILLON, OHIO

For running-in new and rebuilt
engines use auxiliary lubricants
containing "dag"* Brand
colloidal graphite.

Acheson Colloids Corporation

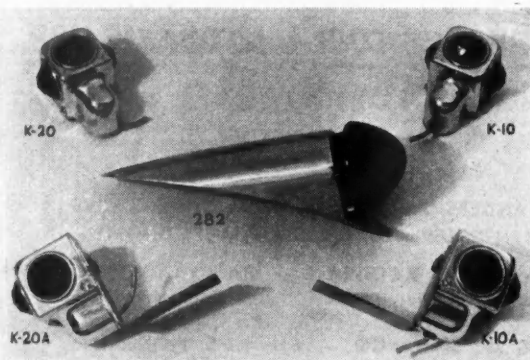
Port Huron  Michigan

*REG. U. S. PAT. OFF.

OXYLATOR

Continuous oxydation of
excess fuel . . .
excess oil . . .
excess carbon . . .
A dirty motor,
rings and crank case is
EXPENSIVE & UNNECESSARY
A New principle
Reduces maintenance cost

Oxylator Co.
Grand Rapids, Michigan



STREAMLINE YOUR LIGHTING with ROYAL NORTON

Outstanding for buses and commercial vehicles, ROYAL DeLuxe Safety
Lamps meet with full approval of the I.C.C. Die cast for solid construction,
they are attractively finished in either chrome or enamel. Numbers K-10
and K-20, extremely compact lamps 1 1/2"

Other ROYAL/NORTON Items:

Lighting Fixtures
Warning and Marker Lamps
Pillar and Dome Lamps
Trailer Fixtures
Reflex Signals
Special and Utility Mirrors

square x 2 1/2" long; feature brilliant
BULL'S-EYE Type Lens and are visible
for 1000 ft. in 3 directions with a 3 C. P.
bulb. Number 282, a waterproof die cast-
ing for motor coach or any distinctive
vehicle. Can be easily installed, furnished
in six colors.

Fleet Operators! Write today for Catalog 40

MONROE ACME COMPANY

215 N. Aberdeen Street,

CHICAGO, ILLINOIS

YES... IT'S NEW AND DIFFERENT!

OAKITE COMPOSITION NO.

70

Provides Complete SAFETY TO SURFACES IN WASHING BUSES AND TRUCKS CHECK THESE ADVANTAGES

- 1 Removes oil, grease and road grime thoroughly, due to its excellent wetting-out and penetrating properties.
- 2 SAFE to use on ALL painted, lacquered or enameled surfaces; helps preserve original color; does not dull or darken surfaces!
- 3 Clings to vertical surfaces, so that washing benefits by reasonable soaking period!
- 4 Completely free-rinsing . . . leaves no streaks!
- 5 Does fast job, saves manual effort.

MORE DETAILS ON REQUEST

From coast to coast, many fleet operators already are finding this specially designed material the money-saving answer to their problem of safely, effectively washing buses and trucks. Let us give you interesting data on how it can also help you more easily and economically maintain your equipment in spic-and-span condition. Write today . . . no obligation.

OAKITE PRODUCTS, INC.
260 THAMES STREET, NEW YORK
Representatives in All Principal Cities of
the U. S. and Canada

OAKITE
Certified cleaning
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

New Body Polish

"Finish Freshener" is the name given a new polish introduced by the McAleer Co., of Detroit. It has been created especially for well-kept cars—especially delivery trucks, taxicabs, light trucks—in fact, wherever there is a problem of keeping equipment looking spic and span every day with a minimum of effort.

The inventor, Fred Weihe, chief chemist for McAleer, claims that polishing a car with "Finish Freshener" is actually quicker and easier than "dusting off" with a dry cloth. His explanation is that the new polish contains only a negligible quantity of abrasive ingredients and combines protective qualities with efficient liquid cleansing agents.

Spark Plug Easily Re-Gapped



A new Blue Crown spark plug, specially designed by Hesselman engines has been announced by the Motor Master Products Corp., 4757 Ravenswood Ave., Chicago, Ill. The plug features a newly-designed ground wire which permits instant re-gapping by placing a thickness gage between the center and ground electrodes, and with a slight gap, force the ground wire down to the proper gap. A heavy-gage wire is said to insure longer life.

New Light-weight Drills

Two new additions to its line of "Multi-Vane" drills have been announced by the Ingersoll-Rand Co., Phillipsburg, N. J. Known as sizes 0 and 00, these light-weight drills can be furnished with attachments



for screw driving, nut running, wire brushing, sanding, etc. Three different types of handles are available for both sizes of drills; straight, lever throttle or pistol-grip.

Why Change Oil!

U. S. Bureau of Standards states: "Oil does NOT wear out mechanically and may be used over and over again." (After reclaiming). Thousands of car, truck and tractor owners have proven the truth of this statement with the use of RECLAIMO. This revolutionary device filters and recycles crankcase oil as you drive. Saves Time, Trouble and Money! Our 36-page illustrated booklet, "OIL FACTS," contains complete details and startling oil truths that will amaze you. Write for your copy today—it's FREE. (Sold direct and by reliable dealers everywhere.) RECLAIMO MFG. CO., 2306 N. Western, Dept. 20 CHICAGO

TRUCK ENGINEERING TRAILERS and BODIES

for all types of service

TRUCK ENGINEERING CORP.
1802 East 38th St. Cleveland, Ohio

LIPE

HEAVY-DUTY Clutches Insure Maximum Clutch Life

- ★ 20 ball-hinged levers for uniform pressure, smooth engagements, easy disengagements.
- ★ Parallel disc contact. ★ No localized burning. ★ Long facing life.
- ★ Warp-resisting pressure plate.
- ★ Rigid cast iron construction. ★ Forced internal air cooling.

Write for Full Information
W. C. LIPE, INC., Syracuse, N. Y.

New Car Wood Distributors

W. H. Hammond, sales manager of the Hoist and Body Division of Car Wood Industries, Inc., Detroit, has announced the appointment of the following hoist and body distributors: W. T. Stringfellow & Co., Nashville, Tenn.; Southern Equipment and Tractor Co., Inc., Monroe, La.; Oden Equipment Co., Albuquerque, N. M., and the Fruehauf Trailer and Equipment Co., Seattle, Wash., and Portland, Ore.

TOMORROW'S TOOL for TODAY'S JOB

THE ONE-MAN CRANKSHAFT GRINDER

IS OUR CONTRIBUTION TO
NATIONAL DEFENSE

IT HANDLES ONE OF AMERICA'S TOUGH JOBS
WITH SPEED — EFFICIENCY — ECONOMY

LOCALIZED — ACCURATE — RAPID GRINDING.
Will Refinish any Flat, Scored, Tapered or Babbitt-smear'd Crankpin Worthy of Repair.

Mc & Mc SALES CO. — BILLINGS, MONTANA



STANDARD
EQUIPMENT FOR
CRANKPINS
1 7/8" — 2 1/4" — \$35.00
EXTRA EQUIPMENT
FOR CRANKPINS
2 5/16" — 2 3/4" — \$5.00
ADDITIONAL
NET F.O.B. BILLINGS,
MONTANA TO
FLEET OPERATORS

DESIGNED FOR BULK LOADS AT LOW COST!



Combining rugged construction with light weight, OHIO HOPPER DUMP TRAILERS

offer a means to lower ton mile cost. The low unit weight allows increased pay tonnage at an initial cost lower than most mechanical dumps.

The OHIO HOPPER DUMP unit illustrated is a 14-yd. SEMI-TRAILER with maximum payload of 14 tons. Weighs but 6600#. Hi-tensile steel body and special frame, bolted and riveted to insure flexibility, are invaluable on strip-mining operations or similar projects. Unit will handle silica, sand, soda ash, coal or any bulk commodity that can be unloaded by gravity.

Write for specifications, stating your requirements, today.

OHIO BODY MANUFACTURING CO., Ashland, Ohio

TESTED

Pyrene

TIRE CHAINS

For Uniformity and Long Life

Pyrene Manufacturing Company
CHICAGO NEWARK NEW JERSEY KANSAS CITY ATLANTA SAN FRANCISCO

REDUCE COSTS with RAMCO 10 up

PISTON RINGS

SPECIALLY BUILT FOR FLEET OPERATION
See your Ramco Jobber or write Ramsey Accessories Mfg. Corp., 3710 Forest Park Boulevard, St. Louis, Missouri.

YOUNG Crankless WINDOW REGULATORS

"The Answer to Window Troubles"

NO GEARS . . . RACKS . . . MAINTENANCE

See Your Hardware Dealer
YOUNG WINDOWS • 33 W. 60th St., N.Y.

Degummed Castor Oil

A castor oil, said to be rendered 100 per cent gum-free by means of an exclusive process, is available from the Pawling Refining Corp., Port Chester, N. Y. It is claimed to have a highly detergent action upon sludge and carbon in internal combustion engines, and to produce greater wetness, due to the lowering of surface tension.

Seiberling Adds New Tires

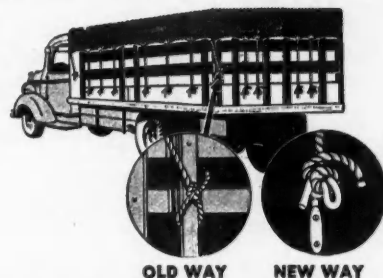
The Seiberling Rubber Co., Akron, Ohio, has announced a series of additions to its line of special tires for use in such industries as road construction, strip coal mining, lumber, logging and timber. These additions are:

7.50 — 20	T.L.*	T.B.**	— 8 ply
8.25 — 20	T.L.	T.B.	— 10 ply
9.00 — 18	T.L.	T.B.	— 10 ply
9.00 — 20	T.L.	T.B.	— 10 ply
10.00 — 20	T.L.	T.B.	— 12 ply
7.50 — 20	T.L.	T.B.	— 10 ply (Extra Ply)
8.25 — 20	T.L.	T.B.	— 12 ply (Extra Ply)
9.00 — 20	T.L.	T.B.	— 12 ply (Extra Ply)
10.00 — 20	T.L.	T.B.	— 14 ply (Extra Ply)

* Signifies "Traction Lug"

** Signifies "Truck & Bus"

A new sales and service branch, ultra-modern in facilities, appointments and appearance, was opened recently in Chicago by the DeVilbiss Co., manufacturer of spray painting equipment, air compressors, etc. It will be located at 1280 West Washington Boulevard.



ROP-LOC

Fastens Ropes to STAY — Without Knots

Here's just what you are looking for to fasten tarpaulin ropes. ROP-LOC, a simple one-piece hook, does the trick without knots. Just loop the rope around ROP-LOC and draw end tight in the gripper. Can't slip or work loose. Just as easy to release with a quick pull of the rope end. No knots to jam, swell or freeze. No flapping tarpaulins, no road delays. Easily installed on any truck or trailer with rivets, screws, bolts or welding. Fastens to rope rails with simple U-bolts. Saves time, temper and tarpaulins.

Write for Interesting Booklet

If your jobber cannot furnish write for full details and prices.

CLEVELAND ACCESSORIES COMPANY
1514 N B C Bldg. • Cleveland, O.

There's only One

BURN-OUT PROOF

DIRECTIONAL SIGNAL SWITCH

and we make it!

In complete sets of Signal-Stats or as a replacement switch.

ASK YOUR JOBBER Pat. Pend.

SIGNAL-STAT CORPORATION
68 JAY STREET BROOKLYN, N. Y.

THE DELIVERY SYSTEM FOR STORES OF QUALITY

UPS

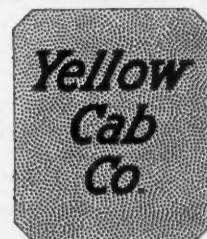
SINCE 1907

Cut Decoration Costs . . .

with a FOWLER SILK SCREEN OUTFIT

With the new FOWLER Silk Screen Direct Printing Process, any shop man can handle your truck decoration, following a few simple instructions. A compact, practical outfit, the FOWLER Process comes to you completely set up, guaranteeing perfect results. Where direct printing is difficult, due to body construction, decals may be printed easily, quickly, at considerable saving. Once set up, the FOWLER Silk Screen Direct Printing Outfit is like a die, permitting no variation in printing. Can be used for multi-colored impressions. Used by United Parcel Service, Yellow Cab Co.'s, etc.

When writing for quotations, please send decal or insignia to facilitate stencil cutting.



H. B. FOWLER CO., Wayne, Penna.

Advertisers' Index

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert



AC Spark Plug Div. General Motors Corp.....	86-87	De Vilbiss Co., The.....	165
Acheson Colloids Corp.	233	Ditzler Color Co.....	112-113
Ahlberg Bearing Co.	143	Dodge Div. of Chrysler Corp.....	2nd Cover
Alan Wood Steel Co.....	75	Dole Valve Co., The.....	3
Albertson & Co., Inc.....	8	Dole Refrigerating Co.	229
Alemite	97	Do-Ray Lamp Co.....	148
Aluminum Company of America.....	3rd Cover	Dromgold and Glenn.....	84
American Automatic Devices Co.....	192-193	Dry-Zero Corp.	189-212
American Bosch Corp.....	231	Duplex Truck Co.	231
American Brakeblok Div. of The American Brake Shoe & Foundry Co.....	89	Du Pont de Nemours & Co., E. I., Fabrikoid Division	15
American Cable Division.....	161	Duro Metal Products Co.....	224
American Chain & Cable Co., Inc.....	161	Eberhard Mfg. Co. (Div. of the Eastern Malle- able Iron Co.)	201
American Hammered Piston Ring Co., Koppers Div.	125	Eclipse Machine Div. Bendix Aviation Corp.....	122
American Safety Tank Co.....	90	Edison-Splitdorf Corp.	93
American Steel Foundries Co.....	156	Edwards Iron Works	119
American Steel & Wire Co.....	163	Elastic Stop Nut Corp.....	142
Anthony Co.	162	Electric Auto-Lite Co., The.....	13-137
Armour and Co. Curled Hair Division.....	158	Electric Auto-Lite Co., The (Wire Division)...	129
Armstrong Cork Co.....	214	Electric Heat Control Co.....	226
Arrow Safety Device Co.....	222	Electric Storage Battery Co., The.....	69
Atlas Fence Co.....	232	Ensign Carburetor Co.	229
Austin Trailer Equipment Co.....	231	Ethyl Gasoline Corp.....	171
Autocar	7	Exide Batteries	69
Autopulse Corp.	106	Federal-Mogul Corp.	167
Available Truck Co.	232	Federal Motor Truck Co.....	71
Baker Mfg. Co.....	233	Ferodo & Asbestos, Inc.....	98
Baldor Electric Co.....	231	Fitzgerald Mfg. Co.	223
Bendix Products Div. of Bendix Aviation Corp..	67	Flour City Brush Co.	226
Blackhawk Mfg. Co.....	95	Ford Motor Co.	183
Blood Brothers Machine Co.....	227	Fowler Co., H. B.....	235
Bolser Corp.	178	Four Wheel Drive Auto Co.....	Back Cover
Bordick Steel Products, Inc.....	232	Frink, Carl H., Inc.....	232
Bowers Battery Mfg. Co., Inc.....	153	Fruehauf Trailer Co.	12
Bowser & Co., S. F.....	94	Fuller Mfg. Co.	164
Brown-Lipe Gear Co.....	237	G & O Mfg. Co.....	225
Buffalo Fire Appliance Corp.....	170	Gar Wood Industries, Inc.....	141
Burch Corp.	224	Gatke Corp.	194
Carnegie-Illinois Steel Corp.....	163	General Electric Co.	200
Carter Carburetor Corp.....	6	General Fire Truck Corp.....	144
Cello Products Co.....	224	General Motors Corp.	77
Champion Pneumatic Co.....	228	General Tire & Rubber Co.....	117
Champion Spark Plug Co.....	9	Globe-Union, Inc.	219
Chase & Co., L. C.....	150	Goodrich Co., The B. F.....	240
Chevrolet Motor Div. General Motors Sales Corp.	155	Gramm Trailer Div. Gramm Motor Truck Corp.	166
Cleveland Accessories Co.....	235	Hall Mfg. Co.....	116
Cloyes Gear Works.....	231	Hansen Mfg. Co., A. L.....	78
Cole-Hersee Co.	220	Haskelite Mfg. Corp.....	226
Columbia Steel Co.....	163	Hastings Mfg. Co.	132
Continental Motors Corp.	184	Heil Co., The	233
Crescent Co.	191	Hein-Werner Motor Parts Corp.....	151
Cummins Engine Co.....	1	Holland Hitch Co.	207
Curran Corp.	216	Hollingshead Corp., R. M.....	127
Curtis Pneumatic Machinery Co.....	220	Hoof Products Co.....	160
Dart Truck Co.....	233	Imperial Brass Mfg. Co.....	227
Delco Brake Division General Motors Corp.....	139	Indium Corp. of America.....	168
Delco-Remy	175	Ingersoll-Rand	225
De Luxe Products Co.....	110	International Harvester Co.....	16

Continued on Page 238